ADPRO Presidium Mini by Xtralis

Installation and User Manual

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ADPRO® by xtralis™

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This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, the user is encouraged to try to correct the interference by one or more of the following measures; re-orientate or relocate the receiving antenna, increase the separation between the equipment and receiver, connect the equipment to a power outlet which is on a different power circuit to the receiver or consult the dealer or an experienced radio/television technician for help.

Document Conventions

The following typographic conventions are used in this document.

Convention	Description
Bold	Used to denote: emphasis Used for names of menus, menu options, toolbar buttons
Italics	Used to denote: references to other parts of this document or other documents. Used for the result of an action

The following icons are used in this document

Convention	Description
	Caution: This icon is used to indicate that there is a danger to equipment. The danger could be loss of data, physical damage, or permanent corruption of configuration details.
	Warning: This icon is used to indicate that there is a danger of electric shock. This may lead to death or permanent injury.
	Warning: This icon is used to indicate that there is a danger of inhaling dangerous substances. This may lead to death or permanent injury.

Apple m DNSResponder Licence Agreement

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Lightning or Related Voltage Surges

Damage or malfunction caused by lightning or related voltage surges may be excluded from the manufacturer's warranty at the manufacturer's discretion.

Safety Procedures
Installations in the United States of America and Canada

For systems installed in the United States of America and Canada the following requirement is applicable:

All equipment installations are required to be in accordance with the National Electrical Code (NEC) ANSI/NFPA 70 and the Canadian Electrical Code (CEC) Part 1, CAN/CSA C22.1.

If the power cord is not supplied with the Presidium select the proper power cord according to your local national electricity code.

USA: use a UL listed type SVT or SJT detachable power cord.
Canada: use a CSA certified detachable power cord.

Radio Interference

The Presidium complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The Presidium complies with the electromagnetic emission limit requirements of AS/NZS CISPR22 and EN55022 Class A. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Compliance of Power Cord

Caution: If the power cord supplied with the Presidium or the Presidium Mini plug pack is not suitable for your local power connection, do not modify the cord or plug pack. Please purchase a power cord that has the safety approvals appropriate for your country.

Connection to Other Equipment

Caution: All interface ports on the Presidium must be only connected to other equipment or systems that are Safety Extra Low Voltage (SELV) rated. Failure to do so will invalidate the electrical safety approval and may cause injury or loss of life

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Declaration of Conformity

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declares, that the product(s):

Product Name:	ADPRO Presidium Mini by Xtralis Intelligent Video System
Model Number:	PDM-Mini

meet the Standards detailed below.

EMC Emissions	EN55022:1998 (CISPR 22:1997) + A1, A2, AS/NZS CISPR 22:2006 Class A Conducted and radiated emissions. FCC Part 15 Class A Conducted and radiated emissions. EN 61000-3-2:2000 + A1 + A2 Current harmonic emissions. EN 61000-3-3:1995 + A1 Voltage fluctuations and flicker.
EMC Immunity	EN 50130-4:1995 +A1 + A2 Alarm systems immunity.
Safety	EN 60950-1:2001 Safety of Information Technology Equipment IEC 60950-1:2001 1991 Safety of Information Technology Equipment

Supplementary Information

The products listed comply with the requirements of the Low Voltage Directive 2006/95/EC (where applicable) and the EMC Directive 2004/108/EC and carries the CE marking accordingly. The products were tested in a typical configuration. The CE Mark first applied in 2002.

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1 Introduction

The Presidium Mini Compact Intelligent Video System is a high performance, DC powered, 2-channel video movement detection system in a desktop/wallmount enclosure for the protection of smaller properties.

Presidium Mini employs state of the art digital signal processing hardware and software to provide a high level of performance by reducing unwanted alarms without compromising detection.

The Presidium Mini has been designed to be fully compatible with all CCIR/PAL and RS170/ NTSC CCTV systems (monochrome and colour). It is simple to include in new designs or to retrofit to existing CCTV systems to improve security.

1.1 Features of the Presidium Mini

- Two channels
- Advanced algorithms to maximise target acquisition and tracking under a wide range of environmental conditions
- Low probability of false alarms from small animals, clouds, wind and rain
- Multiple free form detection zones
- Additional functionality to enhance the Presidium detection capability and reduce unwanted alarms to near zero such as directional object detection, dual edge trigger areas used to qualify alarms, single edge target detection and timer enabled detection for sterile zone loitering.
- Contrast alarms for sabotage detection
- No video detection for camera, lens or cable failure
- Easy to commission via quick setup feature
- External access control input for easy integration into a security system
- External detection inhibit input to reset all alarms
- External alarm inputs for integration of other alarm sensors
- Small size footprint via desktop/wallmount enclosure
- 12 V DC power supply supports battery based operation.

1.2 Installation Steps

The following steps must be followed to install a Presidium Mini system:

- Design the system
  - Gather site information (refer to *Preliminary Information* on page 7)
  - Discuss requirements with client
  - Survey the site (refer to *Site Survey* on page 7)
  - Select the equipment (refer to *System Hardware* on page 11)
- Install the system
- Commission the system
  - Install Presidium Setup Utility software on PC (refer to *Install Setup Utility* on page 45)
  - Configure the Presidium Mini (refer to *Configure Presidium* on page 49)
  - Assess the system performance (refer to *Performance Assessment* on page 26)
  - Soak test the system (refer to *Soak Tests* on page 27)
  - Perform system tests (refer to *System Tests* on page 27)

2 Design Guide

2.1 Introduction

The Presidium Mini Intelligent Video System is designed to provide reliable and predictable detection of intrusion into secure areas. The system analyses images from strategically placed CCTV cameras to detect 'human-like[1]' movement, and if the movement fulfils a number of criteria, alarms are generated. These alarms can be handled locally or, coupled with ADPRO's FastTrace / FastTx / FastTrace-R and Monitoring Software, can be transmitted to a remote central monitoring station, assessed and managed by experienced security personnel. A well designed, installed and maintained Presidium Mini system can remove the need for onsite guards or patrols, or provide an adjunct to local monitoring, improving the effectiveness of the overall site security.

2.1.1 Purpose

The purpose of this Design Guide is to describe the specification, design, installation, commissioning and maintenance of ADPRO's Presidium Mini Compact Intelligent Video System. The recommendations presented are designed to achieve optimal system performance and high reliability. Although there are many variations to the recommended scenarios, any departure from these recommendations may result in less than ideal system performance.

2.1.2 Scope

The following items are addressed in this installation manual:

- Presidium Mini Operational Background
- Site Survey and System Design
- Equipment Installation
- System Commissioning
- Site and Equipment Maintenance

The following items are not discussed in detail in this guide:

- Design, installation, configuration or maintenance of complementary detection technologies excepting PIRs supplied by ADPRO (refer to other manufacturer's technical and application information).
- Installation or configuration of ADPRO's FastTrace, FastTx or FastTrace-R (refer to the FastTrace / FastTx / FastTrace-R Installation and User Manuals).
- Installation or configuration of ADPRO VideoCentral Monitoring Software (refer to Central Monitoring Station Design Guide, Part No: 201700).
- Any relevant Application Notes, Tech Tips and FAQs. Refer to Xtralis website - www.xtralis.com.

2.1.3 Intended Audience

The intended audience for this Design Guide includes the following key stakeholders:

- Security Consultants
- System Integrators
- System Installers
- Facilities / Building / Site Managers

1.Human-like: a feature that is able to differentiate between human and non-human movement for intrusion detection.

2.1.4 Other Resources

A number of other resources should also be used in conjunction with this Design Guide.

- Presidium Mini Design Forms - refer to *System Design and Equipment Checklist* on page 99.
- Presidium Mini Commissioning Forms - refer to *Commissioning Checklist* on page 83.
- Presidium Mini Maintenance Forms - refer to *Site Maintenance Tables* on page 87.

Where Remote Monitoring is a requirement, the Central Monitoring Station Design Guide should be used in conjunction with this Design Guide.

2.2 Quick Guide

This guide divides the implementation of an Presidium Mini system into four main areas:

- System Design
- System Installation
- Site Commissioning
- Site Maintenance

The Quick Guide shown in Table 1 provides an overview of key design considerations allocated in each step and may be used as a quick reference. It should be used in conjunction with the entire Presidium Mini Manual to produce a robust system design.

Table 1: Quick Guide

Area	Key Design Considerations	Reference
Site Survey & Checklist	Conducting a site survey and what information should be gathered	*Site Survey* on page 7 and *Site Survey Checklist* on page 95
Illumination	Illumination selection and location for use with Presidium Mini	*Illumination Requirements* on page 19
Cameras	Camera selection and location for use with Presidium Mini	*Camera Selection and Location* on page 11, *Camera/PIR Alignment* on page 19, *Camera Installation* on page 22 and *Camera / Lens Selection* on page 81
PIRs	Design and installation of PIRs with Presidium Mini	*Other Detectors Selection and Location* on page 15, *PIR Alignment* on page 17, *Camera/PIR Alignment* on page 19 and *PIR Installation* on page 23
Presidium Mini Configuration	Configuring the Presidium Mini system for operation	*Presidium Mini Configuration* on page 25
Commissioning and System Test	Testing the system and checking the detection performance	*Performance Assessment* on page 25, *System Tests* on page 26 and *Site Detection Tests* on page 85
System Maintenance	Ensuring the system continually operates to the required criteria	*Site Maintenance* on page 26, *Site Detection Tests* on page 85 and *Site Maintenance Tables* on page 87

2.3 The Role of Security

Security is becoming an increasingly accepted part of every day living. It is imperative for organisations to consider physical and information security as a fundamentally important element of their overall management strategy. Suitable security must include detailed Risk Analysis and Management as well as an awareness of Business Continuity Management, ensuring that the system instituted provides the organisation with the best approach to achieve ongoing success.

The key elements to instituting a security solution are:

- Identify and Evaluate Risks
- Develop Strategy to Remove or Reduce Risks
- Test and Monitor Strategy

2.3.1 ADPRO Solutions

ADPRO provides a range of video security solutions that focus on remote monitoring of facilities, but also provide excellent onsite monitoring capabilities. The product range features video transmission, video recording and video detection systems that link to an industry leading software package, VideoCentral, for remote management and control. A typical approach to security is to provide an indication when an intrusion has occurred, ADPRO, however, recognises the value in being able to immediately identify the cause, evaluate the situation and respond accordingly.

ADPRO's combination of onsite detectors, audio/video recording and transmission to monitoring stations, provides security in a wide variety of markets and application areas. Presidium Mini forms an important element of security solutions where automatic detection and verification of an intrusion is paramount.

2.3.2 Presidium Mini - an ADPRO Solution

ADPRO Presidium Mini, in conjunction with the other Xtralis products, are ideally suited for security solutions where the risk is illegal intrusion into a high value asset. The Presidium Mini approach provides reliable protection of a perimeter or sterile area, with rapid identification of the cause of any intrusion within that perimeter.

The Presidium Mini system, coupled with other ADPRO technologies, can form an important link in responding to different scenarios:

- A remotely monitored standard Presidium Mini system, linked to ADPRO’s FastTrace or FastTx provides rapid remote response, with an option for local response follow up. The response from a remote monitoring station, followed by dispatch of security guards or law enforcement provides a powerful, flexible and effective solution to many site security problems.
- The presence of a Presidium Mini system at a site can provide rapid local response. When local notification via standard CCTV monitors is linked to alarm systems for visual and audible notification at a local monitoring station, it is possible for guards to respond appropriately in the minimum timeframe. Automatic monitoring of multiple video channels provides significant security and cost benefits.

2.4 Presidium Mini System Concept

This section provides a brief description of how Presidium Mini performs image processing to determine if an intruder is present in the protected area.

2.4.1 Operational Concept

Presidium Mini analyses video from CCTV cameras to detect movement that is likely to be an intruder. A number of criteria, used in conjunction with complex image processing routines, are used to distinguish between an intruder and some other form of movement. The same techniques are used to reduce other factors such as changes in contrast from shadows cast by clouds and moving trees.

Presidium Mini monitors contrast changes and rate of contrast change within the defined detection areas. This information on contrast changes and rates of change is fed into a number of computational routines that analyse the changes and extract valid targets from the images whilst rejecting changes from background movement. The detected targets are further analysed to ensure that they meet criteria based on size and speed. If the criteria is met, an alarm is generated.

What is actually considered a target will depend on your particular security requirements. In a high security environment, the maximum horizontal Field of View (FOV) should be less than for that in a medium security environment.

2.4.2 Basic Parameters

To achieve high detection probability and effective nuisance alarm rejection, the field of view at the maximum detection distance should be no more than 16.7 times the target size.

For example, to detect a 1.8m high human target, the recommended maximum field of view at the maximum detection distance is:

FOV = 16.7 x 1.8m = 30m

If a larger field of view is used, then the detection probability is reduced.

In this scenario, increasing Presidium Mini's sensitivity can only partially compensate for the reduced detection probability and may lead to an increase in the number of false alarms. It is not recommended.

The maximum horizontal FOV, and the required target size to be detected determines the required camera and lens configuration.

2.5 System Design

The system design phase consists of three elements:

- **Preliminary Information**: Gather general site information and discuss the security requirements with the customer to ensure that the Presidium Mini meets the customer's requirements.
- **Site Survey**: Conduct a site survey to determine site requirements such as the positioning of cameras and other detectors, lighting, and existing and required communications infrastructure.
- **Equipment Selection**: Conduct a comprehensive analysis to determine equipment requirements, such as camera types and lenses, level and type of illumination, and communications and control room equipment.

The system design is critical to ensure that the Presidium Mini system performs as expected. A well-designed system can deliver exceptional performance, whereas a system that has not had a rigorous design process will not perform to expectations. Presidium Mini provides a high level of flexibility in its configuration, but is dependent on the quality of video signals and scene content to deliver a high performance solution.

2.5.1 Preliminary Information

Gather site information to determine Presidium Mini's suitability for the site. If possible, obtain a copy of the site plans to check the layout and suitability of Presidium Mini.

Assess Site Plans

Assessing the site plans prior to visiting the site allows a quick overview, as knowledge of this is important for a good Presidium Mini system design. If unable to obtain site plans prior to visiting the site, then once on site prepare a sketch of the site, remembering to include the immediate external environment, such as roads and location of neighbouring buildings.

Discuss Requirements

During the preliminary stages, discuss the security requirements and expectations with the customer's representative. Different areas of the site may have varying security requirements and knowledge of the external environment is critical in understanding the customer's requirements and performance expectations from the system. Collect information about the customer's response requirements, such as use of local guards and/or remote monitoring.

Recommendations

If, after the preliminary investigation phase, the site is deemed suitable for Presidium Mini and the customer's performance expectations can be met, a site survey should be conducted. The following criteria determine the site's suitability for a Presidium Mini system:

1. Sterility of protected area, i.e. how well defined is the border surrounding the protected area, is the area free from general or expected activity, and are there clear areas in which detection can occur.
2. Customer requirements for response (onsite or remote).
3. Customer expectations of system performance, such as false alarms or integration into third party systems.
4. Possible addition of other detection technology, e.g. PIR.
5. At the maximum distance from the camera where a target is expected to be detected, the horizontal field of view should not exceed 25m, or 20m for high security.

2.5.2 Site Survey

Once preliminary information is collected and the site considered suitable for protection with Presidium Mini, a site survey can be conducted. Conduct the site survey taking into account any customer tender or requirements documents to ensure that the survey and subsequent design meet the customer's specifications and requirements. The site survey draws on the preliminary information to design a complete system. Determine all necessary criteria for the system and ensure all relevant information is collected. Where clarification is required, ensure that this is received from the customer (or their representative). Appendix B contains a checklist for a Site Survey.

The items required to perform a detailed site survey include (1) Digital Camera (2) Tape measure (3) Workbook, and (4) Site Plans (accurate engineering drawings of the site).

The different stages of a site survey are described below.

Detailed Site Plan

The production of a detailed site plan annotated with key information (refer to Appendix C for an example) is the key element in completing a successful site survey. As a minimum, the following information must be included:

1. Location and type of existing illumination, including coverage, to determine its suitability. If necessary specify additional illumination.
2. The location for the installation of the Presidium Mini system, to confirm cable run lengths for cameras.
3. If remote monitoring is to be used, confirm the location and type of any existing communications infrastructure.
4. Location of trees, and other vegetation that may affect detection performance, camera positioning and field of view.
5. Type and height of fences or barriers to check where intrusion is likely to occur. Also determine if any concealment of intruders may occur, and what is visible through fences.
6. Any other permanent or semi-permanent structures not already marked on the site plan, e.g. semi-permanent location of large cable drums, which may obscure camera views.
7. Location of any nearby roads, to determine whether street lighting or car lights from any roads nearby may present a lighting problem.
8. Location and description of nearby buildings or structures to understand whether lighting may spill from adjacent properties, or shadows from industrial equipment may affect performance, e.g. a shadow from a moving crane cast across the FOV of a camera may cause nuisance alarms.
9. Location of any existing CCTV cameras or other detectors and their suitability with the Presidium Mini system, or incorporation as a third party detector.
10. Special requirements within protected areas, i.e. high security critical areas within the site, or special requirements due to dangerous chemicals and/or service reliability.
11. If audio is considered for offsite response, identify the location of any noisy equipment, e.g. generators, to ensure that any microphones to be installed will not be affected by the noise. This also relates to onsite audio broadcast equipment, i.e. speakers and horns should be appropriately located and specified with appropriate power.

Site Images

Collect a detailed set of site images covering all protected areas. The site images provide a visual reminder when assessing the site plan offsite. These also provide a reference point during installation and commissioning. Ideally the digital images should be taken under a variety of lighting conditions, i.e. dawn, daylight, dusk and night. The most challenging lighting conditions for CCTV systems can occur at dawn and/or dusk. It is vitally important to be aware of the variable lighting conditions under different circumstances and in different seasons.

The detailed site survey must consider the likely occurrence of seasonal variations. Shedding or sprouting of new leaves on nearby trees may affect lighting conditions and camera views. Ideally there should be no trees in any camera views, however this is not always possible. Lighting and views change as foliage grows or drops, affecting nuisance alarm rates or detection probability.

The following images illustrate some suitable and unsuitable perimeter and area protection scenarios for a Presidium Mini system.

Figure 1: Suitable/Unsuitable Perimeter Conditions

Figure 2: Suitable/Unsuitable Area Detection Scenes

Presidium Mini is used in perimeter and area protection scenarios. The key to providing a successful solution is installing Presidium Mini into a scenario that is suited to its requirements. Essentially, the sterility of the area/perimeter to be protected is paramount. It is essential to have clear areas for target observation with minimum continuous or sporadic movement from non-target sources.

Clarify Requirements

The exact requirements for site security must also be clarified through tender documents or engineering specifications. This is vital to ensure that the system design and installation meets the customer's expectations.

It is good practice to draft a commissioning schedule to further clarify the system acceptance criteria. Details of system commissioning are described in *Site Commissioning* on page 25.

2.5.3 System Hardware

Appendix D contains a checklist for system design and equipment selection.

Camera Selection and Location

The selection and location of cameras is vitally important for the successful operation of the Presidium Mini Video Intrusion System. The cameras are intrinsically linked with any other detectors in use and the availability of suitable lighting.

1. Camera and Video Signal Requirements

Cameras must adhere to the CCIR/PAL or RS170/NTSC standard for suitable operation with Presidium Mini. Each camera channel can pass both colour and monochrome video signals. Presidium Mini only processes the monochrome section of the video signal. Any colour signal present, neither adds nor detracts from the performance.

The following conditions must be met for the Presidium Mini to synchronise to an incoming video signal from the camera and to provide good video motion detection:

- The sync amplitude at the video input of the Presidium Mini must be within 0.2V to 0.4V range
- The video amplitude (not including sync) at the video input of the Presidium Mini must be within the range of 0.5V to 1.0V.

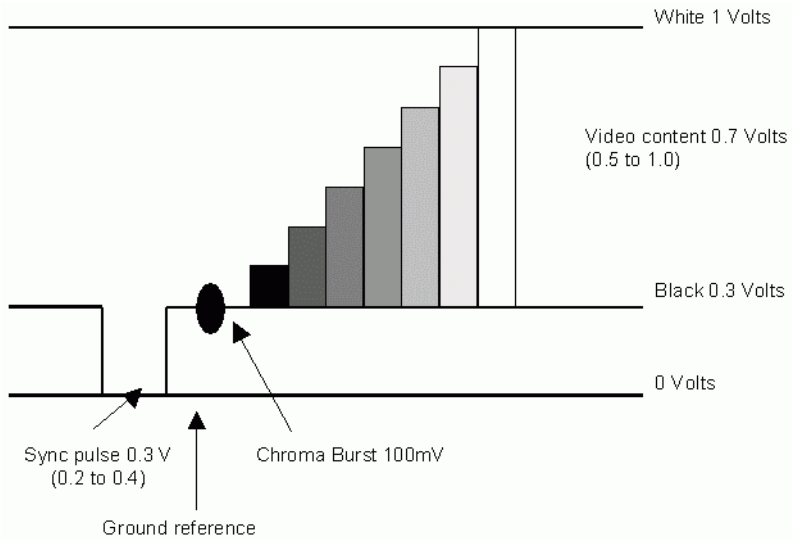


Figure 3: Required Video Signal

If the video level at the video input of the Presidium Mini is low, cable compensators, or line drivers, should be installed at the camera end and adjusted to boost the video signal to within the correct voltage levels. Typically, the best solution is to ensure that the correct grade of coaxial cable is installed to transmit the images over the required distance. Take into consideration impedance and capacitance qualities of the selected cable type to ensure that image degradation is minimised from the outset.

The quality of the video is influenced by the cable length. Generally the shorter the cable runs between the Presidium Mini and the camera, better the quality of the picture. For long cable runs, cable compensators may be required.

A video contrast level indicator may be displayed on the Presidium Mini video output, if required, to assist with setting the video contrast levels. Refer to *Display All Tracks on Video Output* on page 56 for more information.

2. Camera Field of View (FOV)

Setting the correct horizontal FOV of the camera is critical for reliable detection. The horizontal FOV determines the lens required on the camera. The following guidelines are important:

- Ensure there is adequate detection area. The minimum detection area requirement is 6m (19ft) width, i.e. if there is only a 2m (6ft) gap between a building and a fence, then reliable detection will not be possible.
- Ensure that the horizontal FOV at the maximum detection range does not exceed the recommended maximum of 25m (82ft).
- The tilt of the camera should be such that the FOV does not include large areas of the sky, thereby reducing the detection area of the Presidium Mini system.
- Ensure the FOV is clear, with minimum views of foliage and obstructions that provide cover for intruders.
- Presidium Mini uses perspective compensation for its motion detection algorithms, hence it is important that the FOV is not obtuse, i.e. a target in the background on the left edge of the FOV must be the same size as a target on the right edge of the FOV.
- When designing cameras to look along a fenceline, the majority of the horizontal FOV of the camera should be on the monitored side of the fence.

3. Camera and Lens Selection

The maximum horizontal field of view and the likely target size to be detected, determines the required camera and lens configuration. The absolute maximum horizontal field of view where detection occurs should not be more than 30m (98ft).

Presidium Mini functions most effectively when the camera is not mounted too high. The perspective characteristics used in the detection algorithms will not function as expected when the camera is mounted too high. When looking directly down on a cat or a person, their relative sizes are quite similar, the true sizes can be judged only when viewing at an angle. Place the camera at a height that it is out of reach of intruders. This should be between 3 - 6 metres (9.8 - 19.7ft). The ideal height is 4.2m (14ft), as this allows the detection algorithms to function and is high enough to prevent tampering with the camera.

Analysis of the site plans and information from the site survey determine the FOV of the camera to ensure coverage of all areas requiring protection. Always ensure that the maximum horizontal FOV is no greater than 25m (82ft), to avoid compromising detection of small targets.

The tables in Appendix E show the approximate maximum distance between the camera and the target for reliable detection, at a maximum horizontal field of view of 20m (66ft), 22m (75ft) and 25m (82ft) respectively. The approximate dead zone beneath the camera is also shown, for a camera mounted at 4.2m (14ft), although this will vary depending upon the final angle at which the camera is set. These figures should be used for guidance only. Other considerations, such as lighting and external environmental aspects, may dictate the use of different camera/lens combinations.

The formula for determining the distance from camera to target based upon the maximum horizontal FOV is as follows:

$$\text{Distance between camera and target} = \frac{\text{(Lens focal length) x (Maximum horizontal field of view)}}{\text{(Camera format width)}}$$

Where: Distance between the camera and target is in metres.
Maximum horizontal field of view is in metres
Lens focal length is in millimetres
Camera format in millimetres = 8.8 mm for a 2/3" camera.
6.4 mm for a 1/2" camera.
4.4 mm for a 1/3" camera.
3.2 mm for a 1/4" camera.

4. Dead Zones

The dead 'zone' is the area under the camera that the camera cannot view and should be considered during system design. The following figure shows the dead zone area.

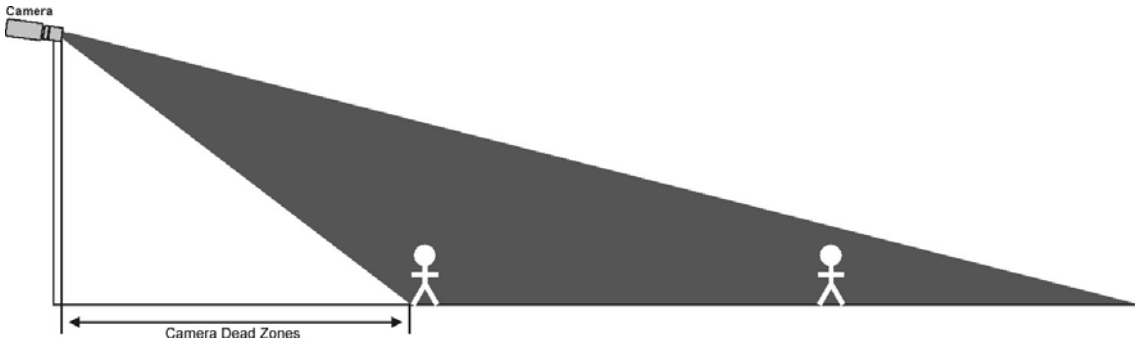


Figure 4: Camera Dead Zone

Camera positioning should be such that the 'dead zone' of one camera is covered by another camera's field of view. The area just in front of the 'dead zone' can also be vulnerable to fast moving targets. It is a good practice to ensure that the field of view of the camera covering the 'dead zone' includes the 'dead zone' plus an extra 10% to 15% of the area adjacent to the 'dead zone'. The following diagram shows the camera's FOV and 'dead zone' in both perimeter and area protection scenarios.

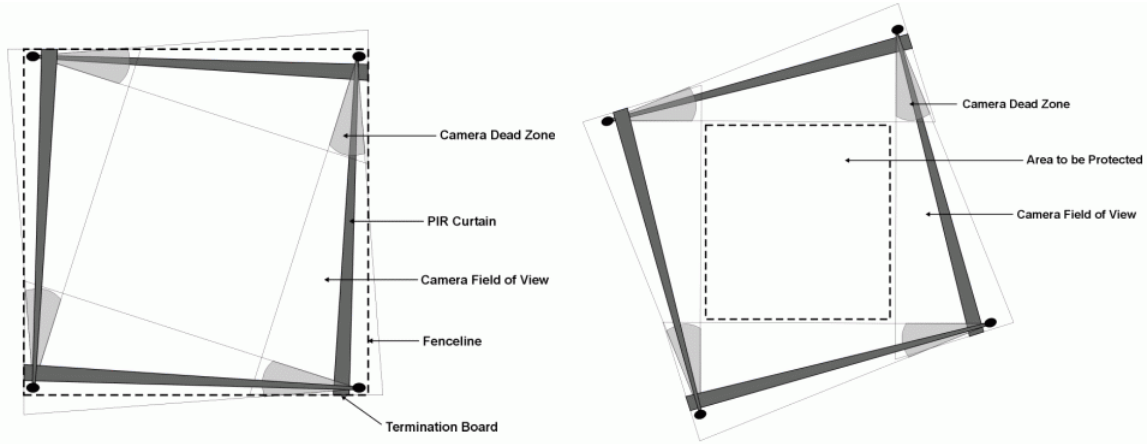


Figure 5: Camera Dead Zone Coverage

5. Optimal Camera Angle

Figure 4, which shows the 'dead zone' of a single camera, also shows the optimal camera angle. The target closest to the camera should have its feet at the base of the camera FOV, and the head of the target at the furthest detection distance should be just below the top of the FOV of the camera.

Normal video monitors do not show the full horizontal video available. Presidium Mini uses all of the horizontal video for detection. Hence when aligning cameras, it is important to take this into account, and if normal monitors are to be used (as opposed to underscanning monitors), then care must be taken to mask out the extreme left and right hand edges of the image using the detection area selection capability of Presidium Mini.

6. Camera Positioning and Mounting

The position and mounting of cameras is vital to ensure reliable performance from a Presidium Mini system. The essentials when choosing a position and mount for cameras are:

- Ensure the camera mount and pole are stable, even in windy conditions. As the lens size increases, smaller movements appear magnified and the stability of the camera mounting becomes increasingly important. Ensure that there are at least three mounting points on the selected camera housing mounting. A camera mounting used for a standard CCTV site implementation may not be suitable, as some camera movement generally does not cause distress to an operator, however Presidium Mini relies on steady camera images. Though the algorithms within Presidium Mini allow for some camera shake, it is advisable to use a heavy duty mounting location or pole. The following figure shows a typically recommended mounting pole for a camera/PIR combination as well as infra-red illuminator.

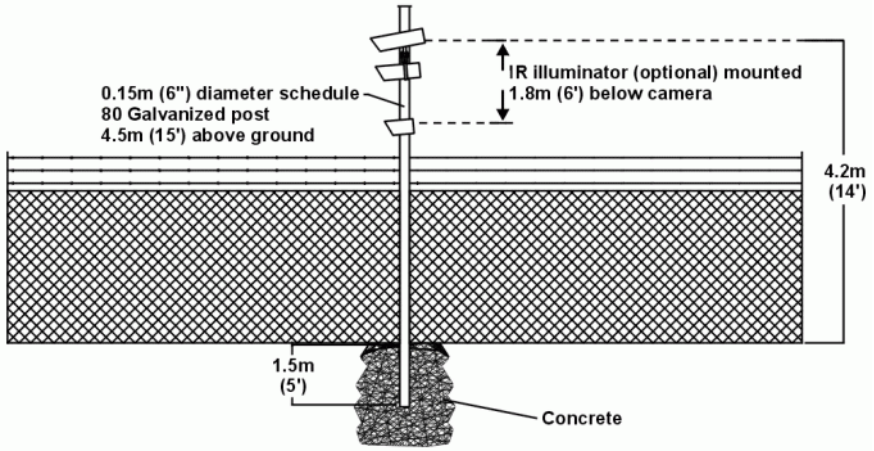


Figure 6: Recommended Presidium Mini Pole Installation

- The position of the cameras relative to lighting is extremely important. Do not install cameras close to lights (particularly infrared illuminators) which could attract insects, or face cameras into lights, windows, the sun, or in areas which have a large number of reflections or shadows. When the lighting is below or to the side of the camera, the recommended safe distance is 2 metres (6 feet).
- If the lighting is directly above the camera, then insects flying up towards the light in front of the camera may cause nuisance alarms or obscure the view. If this is the case, ensure that the lighting is well above the camera, in excess of 4m. The previous image of the pole shows the location of an IR illuminator. The figure below shows this in greater detail.

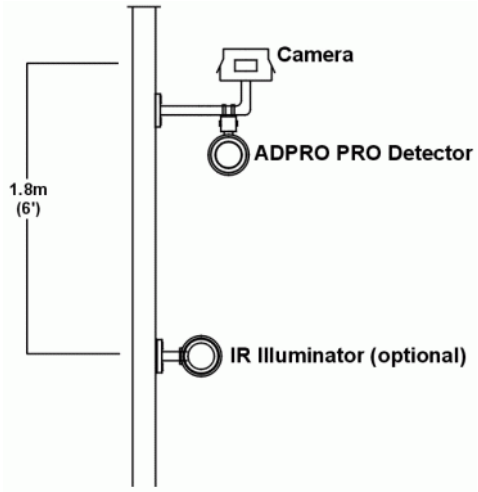


Figure 7: Presidium Mini Pole Front View

- Do not install cameras facing at trees or plants, which may move in the wind or drop leaves (tree shadows may also move in the wind). In many circumstances this is unavoidable, but should be limited as far as possible. Use the Presidium Mini detection area selection functionality to mask out areas with foliage.
- Do not install cameras facing into areas where there is likelihood of vehicle headlights at night. The presence of roads near sites is unavoidable, and the positioning of cameras must account for this. The placement of opaque material on fences near roads can alleviate most nuisance alarms from lighting.
- Take into consideration the position of sunrise and sunset, as well as reflections from objects in the FOV to limit any 'blinding' of the camera due to bright light.
- Do not install cameras facing into bright lights or IR illuminators.

7. Cable Selection

Typically RG59 standard (75 ohm) cable should be used as a minimum requirement:

- In a monochrome system, the cable length should be restricted to 250m (800ft) before cable compensators are installed.
- Signal degradation due to cable length has a far greater effect on colour video, where the coaxial cable should be restricted to 150m (500ft) before cable compensators are installed.

Other Detectors Selection and Location

The rationale behind using an additional detection technology is to provide a system that is not susceptible to any one possible cause for nuisance or false alarms, i.e. using complementary technologies to limit false and nuisance alarms whilst maintaining the highest detection probability. ADPRO recommends using either long-range (for perimeter protection) or wide-angle (for area protection) Passive Infra-Red (PIR) technology in conjunction with Presidium Mini.

In many instances using other detection technologies with Presidium Mini is extremely beneficial to provide a 'double-knock' scenario. 'Double-knock' installations using a different technology can reduce nuisance and false alarm rates to minimal levels, dramatically increasing the overall effectiveness of the system. The benefit of verifying the nature of the intrusion through video images is paramount, with the additional technology providing an extra level of security.

The use of PIR detectors is a well-established and field-hardened method of providing security. The ADPRO range of PIR detectors feature long range and wide angle detectors suitable for perimeter protection and for area protection respectively. The operable range of the detectors varies from 18m (60ft) for the wide angle, up to 150m (500ft) for the longest range PIR. Prevailing site conditions determine the effective range. The recommended maximum is 100m (330ft).

The following diagrams illustrate the alignment of a long range PIR with the camera field of view, and a wide angle PIR with the camera FOV.

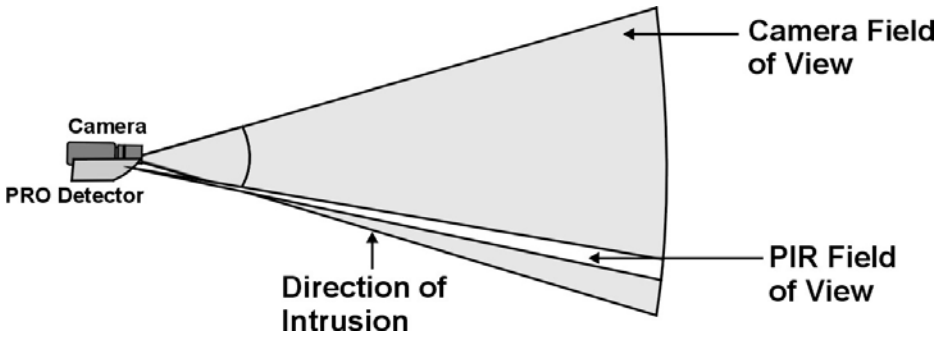


Figure 8: FOV of Curtain PIR with Camera

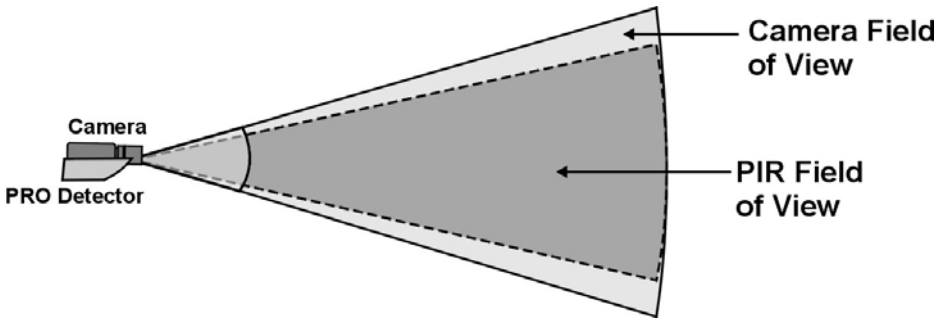


Figure 9: FOV of Wide angle PIR with Camera

To aid aligning the camera and the PIR it is recommended that the PIR is mounted as close to the camera as possible, preferably mounting off the same bracket as the camera, as shown in the following diagram:

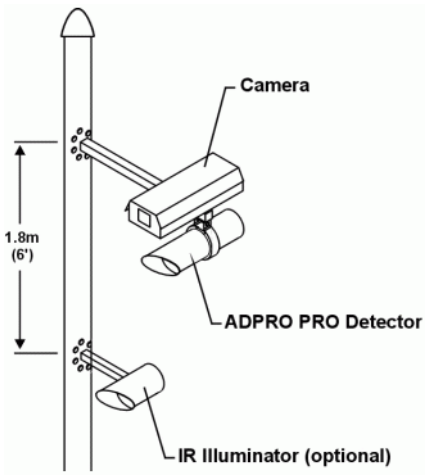


Figure 10: Camera/PIR Mounting Details

The difference in dead zones of the two technologies is an important factor to consider when the PIR/camera combination is used. The PIR may have a very steep downwards angle, whereas a camera may have a much larger dead zone, as illustrated below. This is a very important consideration as a moving target in the camera's dead zone may activate the PIR. The target will not be visible to the camera mounted with the PIR, however the target will be visible to the camera covering the first camera's dead zone. If the PIR/camera dead zones require matching, carefully check the comparative dead zones to ensure that this can be achieved.

Also consider mounting the PIR and camera on separate poles.

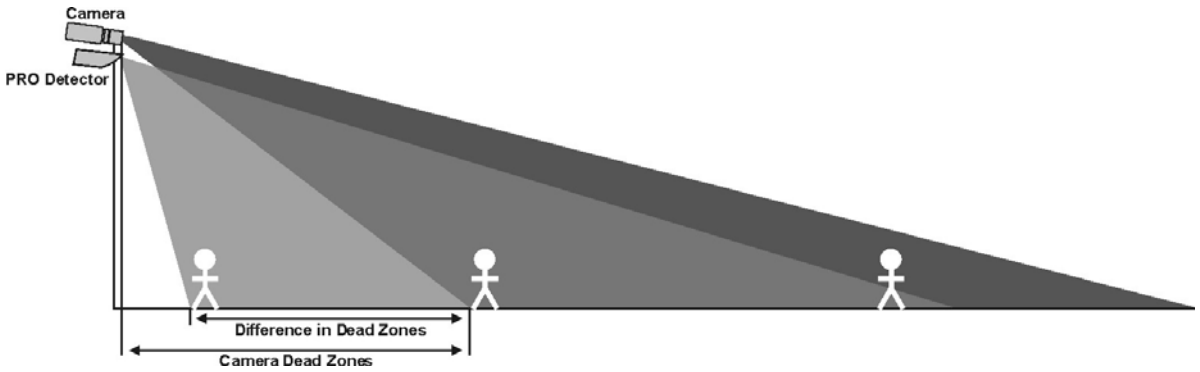


Figure 11: Camera/PIR Dead Zone Comparison

The installation and use of any detection technology should consider:

- The angle of elevation and the horizontal alignment with the camera is critical in providing a high degree of performance.
- It is recommended to keep foliage trimmed and grass cut for a clear PIR and camera FOV.
- Termination barriers are important so that targets past the protected area are not detected.
- Minimise reflective material in the FOV to ensure reflections from sunlight do not affect the PIR.
- Minimise facing PIRs in the direction of sunrise or sunset.
- PIRs also require a maintenance program to clean the lenses and to regularly check performance and alignment.

PIR Alignment

For good PIR performance ensure PIR and camera alignment match. The following figure shows the optimal PIR placement angle, where the top of the curtain is approximately 1m (3ft) high at the maximum detection range.

Figure 12: Optimal PIR Angle

When using a long range PIR next to a fenceline, it is important that the PIR curtain is aligned approx 0.5m (2 ft) inside the fenceline, as shown in the next figure.

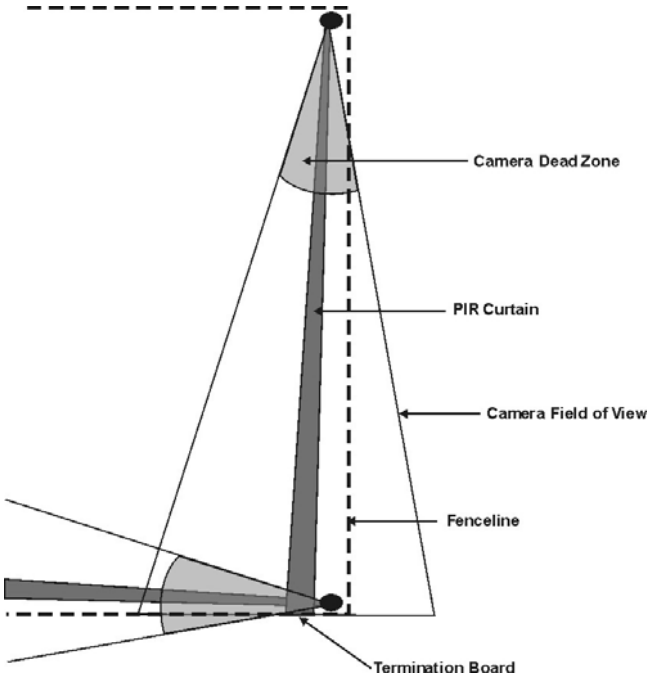


Figure 13: PIR Alignment on Fenceline

PIR Termination

If PIRs are being used on the site, then their detection curtain must be terminated suitably, in a similar fashion to blocking out lights from nearby roads. Referring to Figure 15 under the PIR alignment section, the detection curtain should be terminated by a suitable material at the boundary of detection. Suitable materials include privacy mesh that can be woven into chain link fences, plywood, heavy landscaping cloth or plastic facades. The use of steel is not recommended, as it may heat to a temperature that a PIR may incorrectly detect as a human body.

Figure 14: Example PIR Barrier

Camera/PIR Alignment

The camera alignment relative to the boundary and other cameras is paramount in ensuring that there are no 'blind-spots' on the site. Align each camera to cover the dead zone of the next camera, and to adequately cover the area under protection. If, due to practical limitations, external areas not requiring detection are included in the camera view, use the detection area selection feature in Presidium Mini configuration to mask out such areas. The following figure shows camera alignment and PIR alignment around the perimeter of a facility.

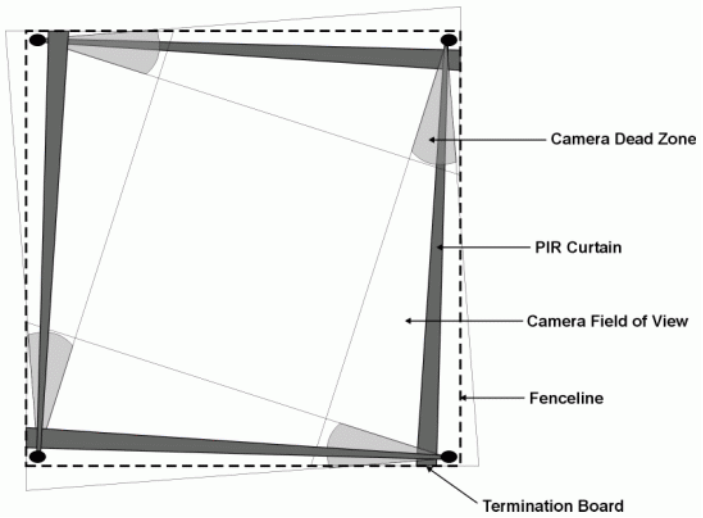


Figure 15: Camera/PIR Alignment

Illumination Requirements

Ideally, the illumination around the site should be even, with no major contrast changes caused by shadows at all times of the day and night. Typically, to provide more even illumination, it is better to utilise high levels of ambient lighting throughout the field of view of the camera rather than subjective lighting systems. To ensure continuous monitoring by Presidium Mini, the lighting (or illuminators) should be on at all times during hours of darkness (typically photo-cell controlled).

Switching illuminators on at the point of alarm in order to deter intruders is not effective because if illumination levels are too low, Presidium Mini may not detect the intrusion. If the scene contrast is poor, and no additional lighting can be installed, then the contrast can be increased by adding stripes to walls and pathways, by painting the background surfaces a light colour or by laying strips of different colours of gravel.

Determining the required lux level from a mathematical calculation can be difficult. There are references available that describe this process in detail. Refer to these references, or other sources for a mathematical approach in determining the lux level required at a site to provide adequate illumination for the cameras selected. Lux meters are available for checking the illumination level at a site and to relate the measurements to camera specifications. A good rule of thumb is, if the target is clearly visible to the human eye at the maximum range under the worst lighting conditions, then a camera can detect it.

The following are some key considerations in determining the best illumination method:

- The requirements will dictate if IR illuminators or visible lighting is used. The cameras used with IR illuminators must be either B&W or day/night cameras capable of automatically switching between colour/B&W depending on the conditions. Visible lighting must be used for colour cameras. The level of lighting required is higher for colour cameras as these have less sensitivity compared to B&W cameras.
- The sensitivity of the cameras determines the required level of illumination. When visible illumination is used, the lighting should be sufficient for the human eye to see targets at the maximum detection range. When using IR illumination, verify the intensity by viewing the camera output on a monitor.
- It is important to ensure that areas where lighting casts shadows do not provide dark areas for intruders to utilise.
- Illuminators (visible or IR) should not be positioned to face directly into a camera.
- Typically, the best type of visible lighting is closest to normal daylight, i.e. a white light source rather than a coloured light source such as sodium vapour.

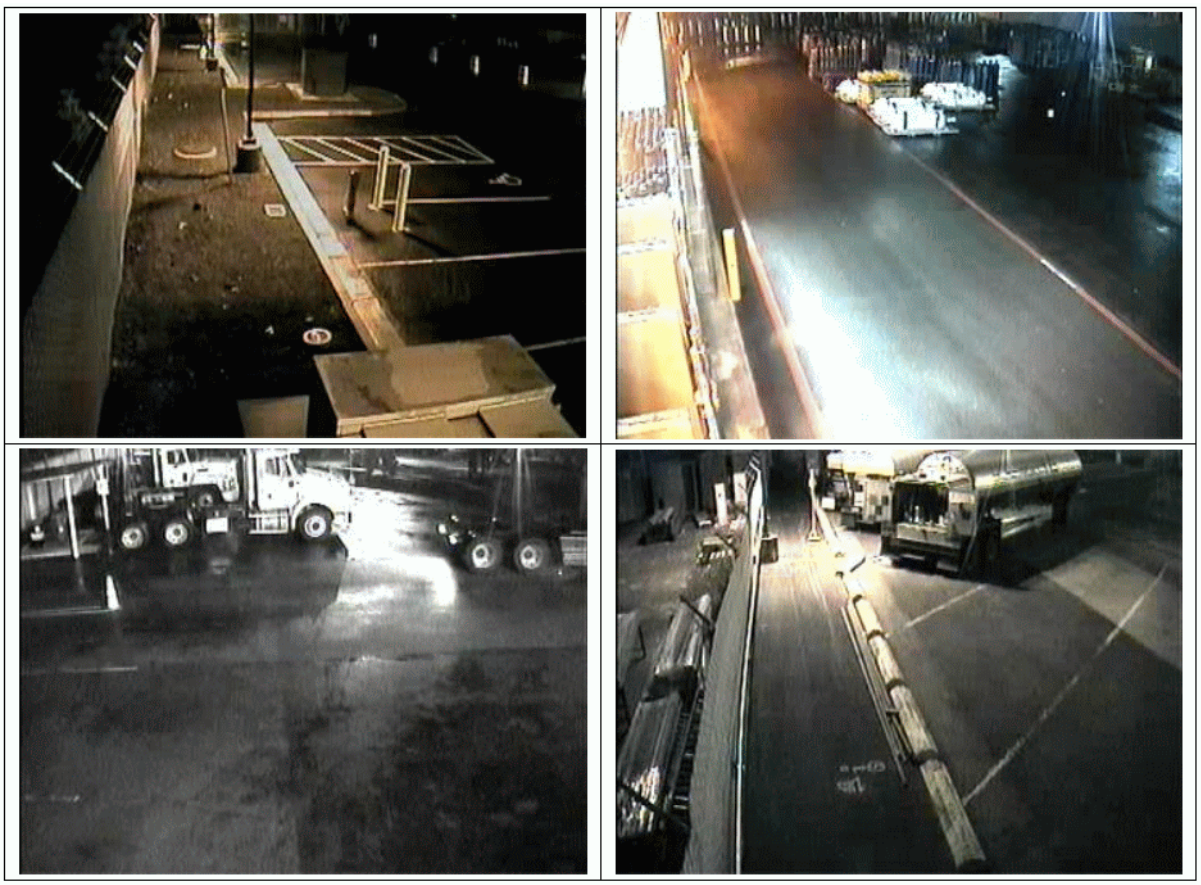


Figure 16: Correctly Illuminated Scenes

Equipment Room

The equipment room for mounting the Presidium Mini equipment should meet the following requirements:

Environmental Requirements

The equipment room should meet the following environmental specification:

- Temperature: 0°C (32°F) to 40°C (104°F) - Presidium Mini
- Humidity: less than 90% non-condensing

Power Supply

Depending upon security requirements, a backup power supply (such as a UPS) should be considered. To ensure total system reliability in the event of power failure, a backup supply would also need to provide power for all the cameras and other detectors, as well as any communications equipment. Refer to *Power Connection* on page 34 for details on power consumption, and the manuals for respective equipment for their power consumption details.

Access Requirements

Access to Presidium Mini equipment should be limited to authorised personnel. An access control system may be used to limit access.

Equipment Mounting

Presidium Mini is housed in a desktop/wall mount enclosure. To ensure proper cooling, the enclosure must be location where it is clear of other heat generating equipment (for example, computers, printers. photocopiers, generators etc). Do not place the enclosure in a position where it will be subject to strong or continuous sunlight.

Monitoring Equipment

A standard Presidium Mini system may be remotely monitored through ADPRO FastTrace / FastTx / FastTrace-R and VideoCentral.

Refer to the Central Monitoring Station Design Guide for details of selection, configuration, operation and maintenance of the remote monitoring station equipment.

Communications Infrastructure

For remote monitoring to be used with ADPRO products, suitable communications infrastructure must be provided. There is a range of communications media choices available for use, such as PSTN, ISDN, ADSL, microwave or RF. The type of communications link is dependent upon a number of criteria:

1. **Existing infrastructure**: To provide a cost effective solution, consider using any existing communications infrastructure at the site, subject to it meeting required bandwidth and other operational requirements.
2. **Backup communications**: Under some circumstance, a secondary communications link may be required if the primary method is negated.
3. **Availability**: Consider the availability of different telecommunications options, as not all telecommunication solutions will be provided by a single provider, or site requirements might exclude certain types of communications.
4. **Installation and operational cost**: The installation and operational cost are a major factor in deciding the type of communications infrastructure selected. The cost is generally linked to the bandwidth provided on the link.
5. **Bandwidth requirements**: The expectation of bandwidth, which ultimately drives how quickly video information can be transmitted, is extremely important to ascertain. Links with throughput of 9600 baud right through to 2 mega baud are available. ADPRO video transmitters are optimised for operation over low-bandwidth links, however they also provide outstanding operation over higher bandwidth links.

2.6 System Installation

Install the Presidium Mini system and associated hardware in accordance with appropriate CCTV installation practices. Ensure adherence to any local, legal or mandatory requirements for electrical or telecommunications infrastructure.

Appendix I contains a flowchart providing an overall view of the installation and commissioning process. It can be used as a guide for the installation and commissioning sequence of events.

2.6.1 Camera Installation

Alignment

Confirming the FOV of the camera is very important. The initial design must ensure that the perimeter (or area) is completely protected and no dead zones are present. Adherence to the design during installation ensures there will be no dead zones or blind spots in the protected area.

Placing traffic cones or markers at the edges of the expected detection areas (foreground and background) provides a mechanism to initially align the camera and ensure that the FOV is as per requirement. Alternatively have one person watch a monitor and direct another (use a walkie-talkie) to walk the site.

Installation Hints

When installing cameras in camera housings, the following hints will avert some nuisance alarms.

- The application of insect repellent material such as pest control strips or surface spray reduces any nuisance alarms caused by insects or spiders in or near camera housings.
- Place a bead of silicone across the top of the shield or housing near the front. This prevents water droplets falling in front of the camera off the front of the sun or rain shield of the housing. When water hits the bead, it diverts to the side and does not collect along the front of the housing.
- Rain or sun shields can catch the wind, causing significant camera shake. To restrict camera movement, appropriately increase the strength of the fixing hardware as the size of the shield increases.

Interference Caused by High Voltage or Ground Loops

There is significant potential for interference to video signals in some installations, particularly on sites with high voltage infrastructure, such as electricity substations. High 'ground loop' currents are produced between equipment earthed at different points around the site. Depending upon the level and type of interference, the ground loop currents have the potential of causing nuisance alarms or a reduced detection rate by causing interference on the video signal (i.e. the picture displayed on the monitor). During the design stage it is important to consider the likelihood of interference from high voltage or ground loops, and factor counter measures into the design, such as floating earths, and isolation transformers on video signals.

Installation Adjacent to Roads

Headlights sweeping across the area under surveillance have the potential to cause nuisance alarms. If the area is near a road and has the likelihood of headlights sweeping over it, consider some sort of light barrier to ensure the headlights do not cause nuisance alarms. The options for light barriers includes a solid panel such as plastic or metal facades placed on fences next to the road, high opacity shade or greenhouse/landscaping cloth, or privacy mesh interwoven on chain-link fences.

2.6.2 PIR Installation

Alignment

Aligning the PIR with the camera is critical for good performance. There are a number of ways of checking PIR alignment.

- A slot in the top of some of ADPRO's range of PIRs can be used as a simple method to align the PIR. Looking through a drinking straw into the slot, or resting a laser pointer in the slot can be used to help with alignment.
- ADPRO offers an alignment telescope for aligning PIRs across the full range.
- A cordless walk tester (CT 45) is available. During a walk test it indicates a detector alarm with a beeper and an LED.
- In addition, a tester and software available for each type of ADPRO PIR provides a very accurate method of aligning the PRO detector. The tester provides an output showing the IR activity that the PIR is sensing. This requires two people, where one acts as a target while the other adjusts the alignment of the PIR to cover the required detection area.

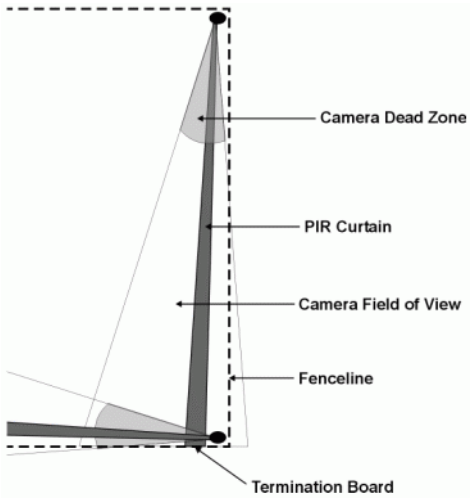


Figure 17: PIR Alignment on Fenceline

It is important that the PIR curtain is aligned approx 0.5m (2ft) inside the fence when a long range PIR is used next to a fence line (the previous figure illustrates this). The PIR can be aligned using previously described methods. Confirm correct alignment, with a walk test performed immediately adjacent to the fence, ensuring that detection does not occur in the 0.5m (2ft) area directly next to the fence.

It is important to ensure that the extents of the PIR detection are within the FOV of the camera, i.e. if a wide angle type PIR is used, the camera FOV must overlap the PIR detection area. To confirm this, the alarm output status (or the test output using the PIR tester software) of the PIR should be monitored as a person walk tests the site. Ensure the person remains within the FOV of the relevant camera.

2.6.3 Instrument Racks and Cablings

There are a number of standard procedures that should be followed while installing any electrical equipment including a rack mounted Presidium Mini:

- Ensure all local safety regulations regarding installation of electrical equipment are followed.
- All cables should be routed neatly and held in place using routing trays, channels or ties.
- All cables should be labelled for future reference and the identifiers marked on cabling diagrams or plans.
- Adequate space should be allocated between all equipment in the rack to provide ventilation.

Once all equipment has been installed and operating in the rack, the temperature in the rack should be monitored to check that the equipment is operating within specified limits (operating range 0°C - 40°C). Even though equipment may be operating within specified limits, reducing the temperature will increase the operable life of all equipment in the system.

Note: **Do not stack** Presidium Mini units on each other due to heat transfer between enclosures.

2.7 Site Commissioning

The Commissioning Phase consists of the following steps:

- Presidium Mini Configuration
- Detection Tests
- Soak Tests
- Monitoring Tests

Appendix F contains a commissioning checklist for each Presidium Mini channel.

2.7.1 Presidium Mini Configuration

The first element of Site Commissioning is to configure the Presidium Mini system. Refer to *Installation / Configuration* on page 45 for instructions.

2.7.2 Performance Assessment

Detection Tests

Presidium Mini, as a detection system, should initially be configured to ensure detection occurs effectively, and then corrective action can occur to limit any nuisance alarms. Whilst performing the detection tests, it is important to ensure that the tests are adequately documented and described for proper ongoing maintenance. A subset of the tests should be performed on a regular basis to confirm correct operation. The detection tests should also be annotated on a site plan to highlight the areas where the tests are performed. Refer to *Site Maintenance* on page 26 for a description of the necessary maintenance procedures.

Site Detection Tests on page 85 contains a table for documenting the detection tests performed and their outcome. Prior to performing the detection tests, **Display all Tracks on Video Output** should be disabled. Refer to *General Setup* on page 56.

For each detection area, the following should be performed:

- Check that the detection area covered by each camera connected to Presidium Mini matches the design, and that the detection areas programmed for Presidium Mini are correctly aligned within the field of view of the camera.
- Check that any PIR detector is aligned as initially designed. This may require using the PIR tester and software to ensure that the angle of the tilt is correct, i.e. approximately 1m (3ft) high at the maximum detection distance, as well as the horizontal alignment of the PIR, using another person as an IR target when required.
- Determine the level of intrusion to be detected, such as a casual opportunistic intruder, or a well planned and executed covert intrusion. Design and document tests based around the security level and scene content. Factors that may vary include the speed of target, the size of the target and the location in the scene. The following describes how to perform the tests, and is suitable for both the PIR and Presidium Mini detection testing:
  - Tests should be performed at three separate locations: the foreground FOV, in the middle of the scene and at the maximum FOV.
  - The target should move to the point where intrusion would expect to start. If this is within the detection area, then once the target has moved to the start point, the target should stay motionless for one minute to allow Presidium Mini to settle.
  - The target should then perform the detection test. As a minimum a walk test and a run test should be performed at each distance. More tests can be performed as required in each individual scene, but most importantly all possible intrusion points must be tested.
  - For size discrimination testing, a small target, such as a basketball rolled across the scene, could be used to check that small targets are or are not being detected by Presidium Mini as required.

- Execute tests in each detection area based on the type of intrusion, and where possible differing environmental conditions, e.g. day/night/dusk/dawn. Ensure that the alarm activation is reported as expected at the Presidium Mini system, and also that any third party system triggered from the Presidium Mini system receives an alarm notification.
- If the system is installed in a high security installation, then tests with different types of camouflaged clothing should also be performed.

Soak Tests

Once the system has been installed and the detection tests performed, then the system must be monitored for its performance in relation to the ambient environment. Changes in environmental conditions, or just routine actions can produce nuisance alarms. The system should be monitored on a daily basis prior to going 'live' to highlight issues of concern, and then adjust the Presidium Mini parameters as required. Every time detection parameters are modified, detection tests should be performed again to ensure the detection performance has not been compromised.

Once the performance of the soak tests has reached an acceptable level, and the detection performance is as required, the system can go 'live'.

2.7.3 System Tests

Typically Presidium Mini is an element of a larger system. The integration and performance of Presidium Mini as a system component must be verified to ensure the complete system behaves as required and expected. There are a number of areas to check:

- For remote monitoring, ensure that generated alarms are successfully transmitted to the Central Monitoring Station.
- If functions such as Access/Secure are being used within Presidium Mini, test that the behaviour meets expectation and the system generates alarms when it is armed.
- If the Presidium Mini is integrated into a larger matrix or CCTV system, ensure that any inputs/outputs to/from the larger CCTV system function as expected.

2.7.4 Recording System Configuration

Once all the Presidium Mini channels have been configured, the configuration details should be saved. Selecting the **Save to File** button on the Presidium Setup screen will cause all settings currently within the software to be saved to the PC (a confirmation box will be presented to verify the required action).

This enables the complete configuration to be saved. This may then be reloaded in the case of a system malfunction or used to configure another system.

The configuration is saved as a .settings file in a user defined location on the PC.

Selecting the **Load from File** button enables the saved configuration to be uploaded to the connected Presidium Mini.

2.8 Site Maintenance

This section covers the following five areas of system maintenance and management:

- Routine Maintenance
- Routine Site Maintenance
- Routine Equipment Maintenance
- Routine Detection Tests
- Maintenance to Regulatory Requirements

2.8.1 Routine Maintenance

On many sites, Presidium Mini will be used in conjunction with other detection technologies. The respective maintenance and testing procedures for the other products should be used in conjunction with this information to ensure overall site security is maintained at the required level. Maintenance of the PRO series of PIR detectors is also covered in this section.

To perform maintenance in a repeatable and consistent manner, it is suggested that a table of tests and checks to be carried out in each inspection/maintenance cycle be drawn up, which should have been done as part of the commissioning phase. This will ensure that the system is tested in a similar fashion each time, particularly if sufficient detail is provided for each test. These tables should include the following information for each camera, PIR and/or detection area:

- Date/Time/Person conducting tests,
- Description of test or maintenance to be performed,
- Results of test or maintenance performed,
- Highlight any maintenance or site issues to be addressed,
- Date/Time for next maintenance/test.

In addition, copies of site plans annotated showing camera locations as well as location of any other detector technologies should be used to document detection areas and the path of detection tests.

Site Maintenance Tables on page 87 contains examples of tables for tracking maintenance procedures and outcomes.

2.8.2 Routine Site Maintenance

Regular site inspections, preferably on monthly basis, that check the listed site conditions should occur as a minimum. These conditions can impact on the performance of Presidium Mini or the level of security provided, but are by no means an exhaustive list. If a very significant change occurs, then a site re-evaluation may be required to ensure optimum performance.

Foliage can impact Presidium Mini in a number of ways, and must be kept controlled so that the following scenarios do not occur:

- Masking areas where detection should occur,
- Causing nuisance alarms where foliage has grown to be visible in the field of view,
- Blocking lighting of areas during the night,
- Removal of foliage causing changed lighting conditions, such as removal of shrubs along a fence line allowing multiple vehicle headlights to sweep across a camera's field of view,
- Moving shadows from wind blown foliage in the field of view of the camera causing nuisance alarms.

Lighting is an essential element of the performance of Presidium Mini. Lighting should be checked to ensure that all areas are adequately lit at all times, and in particular structures or foliage are not blocking lights.

There are other environmental factors that can impact on the performance of Presidium Mini or the level of security provided. These include:

- Changes to adjacent premises, such as the erection of temporary or permanent structures, can alter lighting, provide a path for intruders to access the site, or change activity levels expected around the site.
- Changes within the premises, such as erection of temporary or permanent structures, facilities maintenance activities or new operating procedures.

2.8.3 Routine Equipment Maintenance

There are a number of regular maintenance tasks that should be performed monthly to ensure that the Presidium Mini system continues to perform as expected.

- General inspection of all cabling, conduit, connectors, glands and housings to ensure that they are all in good working order and not suffering deterioration.
- General inspection of the standard Presidium Mini chassis, ensuring that it is dust free and the fan mounted on the power supply is not obstructed in any way.
- Remove the fan cover from the front panel (it clips off) and check whether the fan filter requires cleaning or replacement.
- Regular cleaning of camera housing windows with lens cleaner and a lint-free cloth to ensure that the performance of the system is not prejudiced by poor image quality.
- Check that any heaters, blowers, washers or wipers installed on camera housings are operating as expected.
- Regular cleaning of the window on any PRO series PIR. The window should be cleaned with lens cleaner and a lint free cloth. If the window is showing signs of deterioration or peeling, please contact your Xtralis supplier for replacement details.
- Where insects or spiders can be a problem in or near camera housings, the provision of insect repellent material such as pest control strips or surface spray will reduce any nuisance alarms caused by such events.

2.8.4 Routine Detection Tests

Regular site detection tests should be performed at least once per month, but preferably weekly, to check the Presidium Mini system detects unauthorised intrusions. The detection tests used as part of the maintenance program should follow the tests performed as part of the initial installation and commissioning. The descriptions of these tests should have been documented in tables.

For each detection area, the following should be performed:

- Check that the detection area covered by each camera connected to Presidium Mini matches the initial design and commissioning, and that the detection areas programmed for Presidium Mini are still aligned within the field of view of the camera.
- Check that any PIR detector is still aligned as initially designed and commissioned.
- Execute a test in each detection area based on the type of intrusion, such as a walking target for opportunistic intruder. Ensure that the alarm activation is reported as expected at the Presidium Mini system, and also that any third party system triggered from the Presidium Mini system receives an alarm notification.
- Repeat the tests under the different lighting conditions, e.g. day or night. Conducting tests at dawn/dusk should also be considered as the lighting conditions at these times can provide the most challenging environment for detection.

It is also important to check that detection is not occurring in areas in which detection should not occur. In each detection area, check that detection does not occur in areas that should be masked out, or should not be aligned with PRO series PIRs or other detection technology. With the PIRs in particular, check that detection does not occur past the defined maximum detection point.

2.8.5 Maintenance to Regulatory Requirements

Regular maintenance and testing of security systems may be mandated by internal organisational requirements, but in some industries, specifically 'high risk' industries, such as nuclear power generation, there may be statutory requirements for maintenance and testing. Please check with the appropriate government agencies to determine whether any such criteria apply in your industry area.

3 Presidium Mini Connectors

Presidium Mini is housed in a metal enclosure suitable for desktop placement or vertical attachment to a wall via two screw-mounting tabs.

Important: It is a UL requirement that cabling to a wall mounted Presidium Mini is only from the side or top.

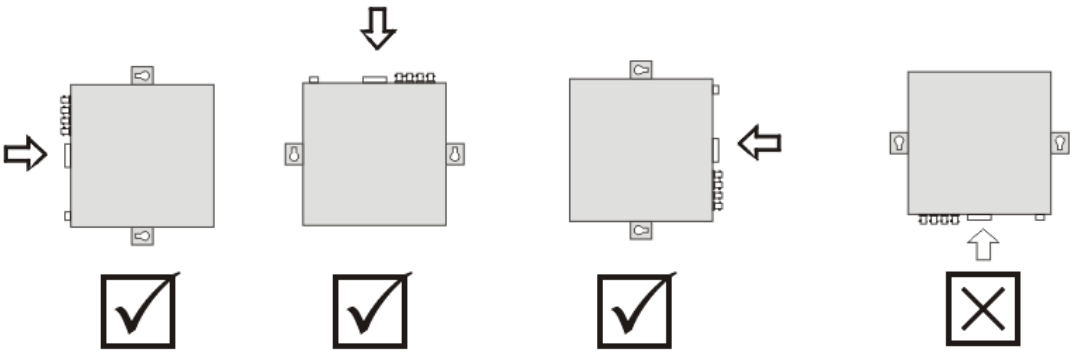


Figure 18: Cable Entry Requirements

Note: When Presidium Mini units are located on a desk top, **do not stack** on each other due to heat transfer between enclosures.

Referring to Figure 20, Presidium Mini has two video movement detection channels, Video A and Video B.

Each channel incorporates Alarm Input Connectors, one per channel, to enable alarm sensors (e.g. Passive Infra-Red (PIR), microwave etc.) to be associated with cameras.

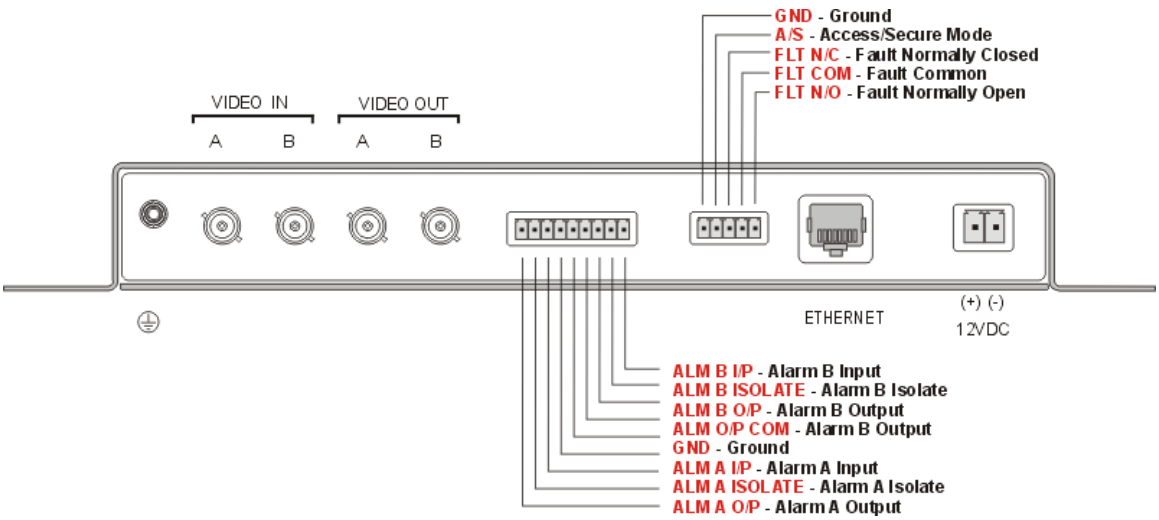

GND - Ground
A/S - Access/Secure Mode
FLT N/C - Fault Normally Closed
FLT COM - Fault Common
FLT N/O - Fault Normally Open
VIDEO IN
VIDEO OUT
A
B
A
B
ETHERNET
(+) (-)
12VDC
ALM B I/P - Alarm B Input
ALM B ISOLATE - Alarm B Isolate
ALM B O/P - Alarm B Output
ALM O/P COM - Alarm B Output
GND - Ground
ALM A I/P - Alarm A Input
ALM A ISOLATE - Alarm A Isolate
ALM A O/P - Alarm A Output

Figure 19: Rear View of the Presidium Mini enclosure

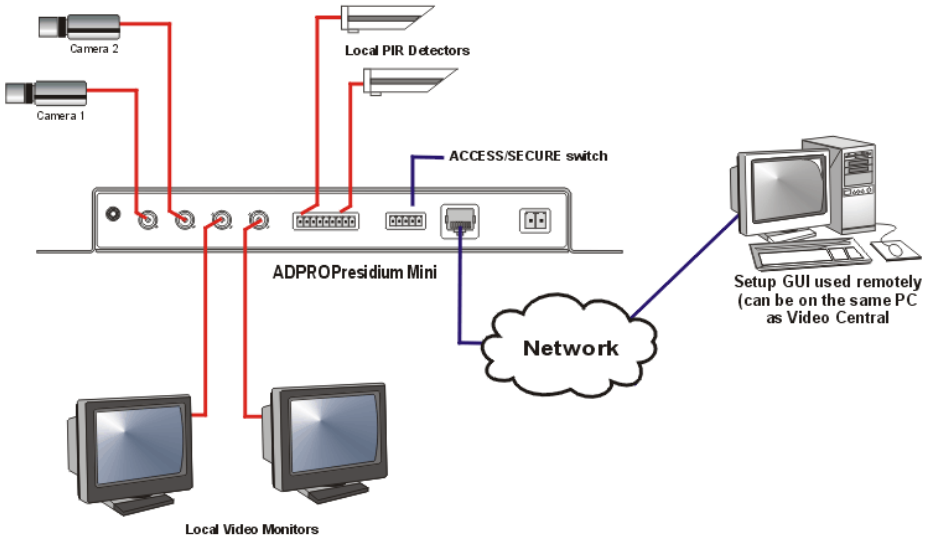


Figure 20: Typical Connections to a Presidium Mini

3.1 Power Connection

The Presidium Mini is designed for regulated 12V DC operation. The recommended method of obtaining this power is from the supplied plug-pack unit via 100-240 VAC 50-60Hz operation. Alternatively, the DC power may also be supplied from a suitable 12V battery source with fuse protection.

3.2 Earthing Screw

IEC 60950-1 (the relevant product safety standard for Presidium Mini) classifies the CCTV systems that Presidium Mini is typically used in, as Cable Distribution Systems.

The integrity of the Presidium Mini protective earth must be ensured. This is to protect service persons, and users of other equipment connected to the CCTV system, from potentially hazardous voltages that may appear on the cables that connect the video cameras to the Presidium Mini.

To ensure the integrity of the protective earth (that is provided via the grounded AC power outlet), Presidium Mini is fitted with an earthing/grounding screw located on the top right corner of the rear panel.

The Presidium Mini earthing/grounding screw must be connected to a suitably grounded object (such as rack frame or metallic water pipes) using wire with a minimum of 2.5 mm^2 cross-section area.

3.3 Video Connections

3.3.1 Inputs

The video output of a camera is connected to a Video In BNC type connector, which may be terminated in 75 ohms (software controlled at setup time). The camera should be terminated unless the camera is teed off the video input to another device.

Presidium Mini has two Video In connections (**Video A In** and **Video B In)** available.

In order to synchronise to the incoming video from the camera and to avoid reduced performance of the video movement detection, the following conditions must be met:

- the sync amplitude at the Video Input of each VM15 Video Module must be within the range of 0.2 V to 0.4 V, and
- the video amplitude (not including sync) at the Video Input of each VM15 Video Module must be within the range of 0.5 V to 1.0 V.

If the video level at the Video Input is poor, cable compensators, or video line drivers, should be installed at the camera end. This boosts the video signal to within the voltage limits given above.

A video contrast level indicator may be displayed on the Presidium Mini video output, if required, to assist with setting the video contrast levels. Refer to *Display All Tracks on Video Output* on page 56 for more information.

3.3.2 Outputs

There are two video outputs on the Presidium Mini:

- **Video A Out**; and,
- **Video B Out**.

The video outputs provide standard composite video signals when driving 75 ohm loads.

In the event of a power failure at the Presidium Mini, the video input signal is passed directly through from the video input to the video output.

The following table details graphics that are displayed on the video outputs:

Table 2: Video Output Display

Display	When	Explanation
No Video Screen	No video detected (refer to *No-Video Detection* on page 67)	A blue screen is displayed with the No Video icon superimposed if valid video signal is not detected at the channel input.
Contrast Icon	Contrast Alert active (refer to *Contrast Monitoring* on page 67)	Displayed when a message is sent to indicate that the video quality is too poor for reliable VMD operation. The Contrast icon is superimposed over the video.
Tamper Icon	Alarm Input Tamper active	Displayed when a tamper on an alarm input triggers an alarm
	Isolate Tamper active	Displayed when tamper on the isolate input triggers an alarm. The Tamper icon is superimposed over the video.
Alarm Input Icon	Alarm Input active (refer to *Alarm Inputs* on page 35)	Displayed when the alarm input is in the 'alarm' state.
Chassis Tamper Icon	Secure Tamper active (refer to *Access/ Secure Input* on page 37)	Displayed when a tamper on the access/secure input triggers an alarm
Video Detection Icon	Video Movement Detection active	Displayed when an alarm is generated by video movement in the detection area.
Alarm Tracks	Alarm event active and Alarm Tracks selected (refer to *Display Alarm Tracks on Video Output* on page 56)	A target bounding box and track history is displayed from the time that an alarm triggers.
All Tracks	Connected and All Tracks selected (refer to *Display All Tracks on Video Output* on page 56)	All active tracking information is displayed. Pre and post alarm tracking is distinguished using colour. Any movement (real or imagined) is tracked. This mode is primarily for diagnostics.

3.4 Alarm Inputs

There are two alarm inputs on the Presidium Mini. They are labelled **ALM A I/P** and **ALM B I/P**.

The alarm inputs may be used to connect PIRs etc to combine with the video motion detection, by 'ANDing' or 'ORing', to generate an alarm. A triggered alarm input may be configured with a 'hold time' from 0 to 60 seconds for alarm generation with VMD (refer to *Alarm Behaviour* on page 65).

To ensure the best immunity to EMC disturbances, the alarm inputs should be wired using shielded cable. Connect the shield to the ground (GND) terminal.

The Alarm Input state may be:

- **Normally Open -** No End Of Line (NEOL) Resistor
- **Normally Closed**
- **Normally Open SEOL -** Single End Of Line Resistor
- **Normally Closed SEOL**
- **Normally Open DEOL -** Dual End Of Line Resistor
- **Normally Closed DEOL**.

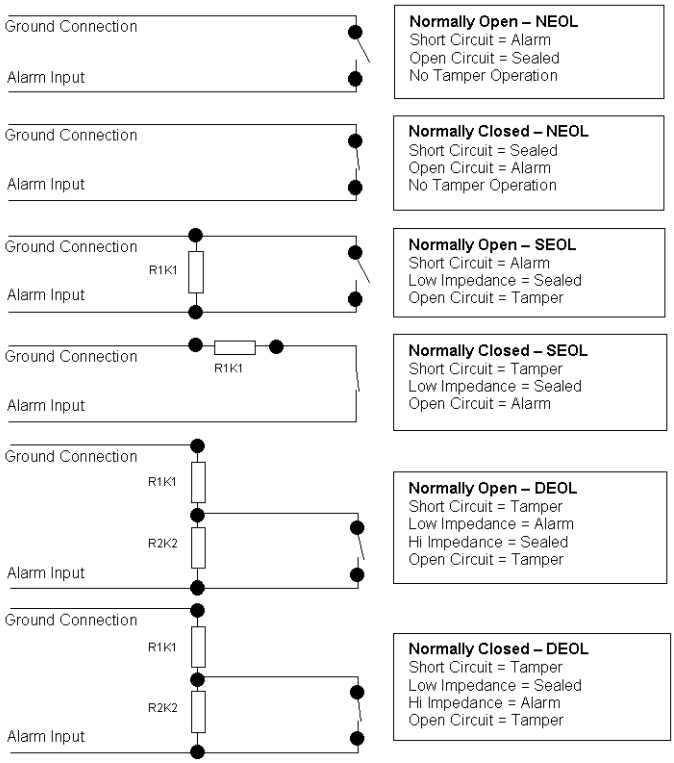


Figure 21: Alarm and Isolate Input Configuration

3.5 Isolation

Isolation inputs are provided for each video channel: **ALM Isolate A** and **ALM Isolate B**. These connections allow individual channels to be isolated (prevented from generating an alarm). This feature is useful in a number of scenarios:

- Commissioning a Presidium Mini
- Fault finding an installation
- Configuring detectors
- Disabling faulty detectors

Both the alarm input and alarm isolate connections are tamper protected (regardless of the access/secure state).

To ensure the best immunity to EMC disturbances, the isolation input should be wired using shielded cable. Connect the shield to the ground (GND) terminal.

Note: If a channel is isolated, no alarm input or tamper alarm will be generated.

The Isolate input state may be:

- **Normally Open -** No End Of Line (NEOL) Resistor
- **Normally Closed**
- **Normally Open SEOL -** Single End Of Line Resistor
- **Normally Closed SEOL**
- **Normally Open DEOL -** Dual End Of Line Resistor
- **Normally Closed DEOL**.

3.6 Alarm Outputs

There are alarm outputs provided for each video channel on the Presidium Mini and labelled **ALM A O/P** and **ALM B O/P**. Alarm outputs may be used to connect the Presidium Mini to third party alarm panels / DVRs etc.

The alarm outputs are normally open. When in an alarm state, the alarm outputs are closed.

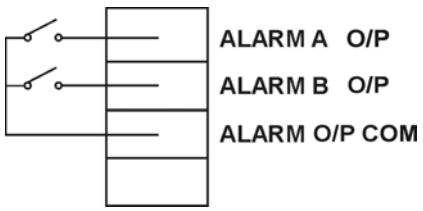


Figure 22: Alarm Outputs

Alarm output relay activates on the occurrence of an intrusion alarm or tamper condition.

All outputs on the alarm connector share a common ground.

3.7 General I/O Connector

To ensure the best immunity to EMC disturbances, the connections on the general I/O connector should be wired using shielded cable. Connect the shield to the ground (GND) terminal.

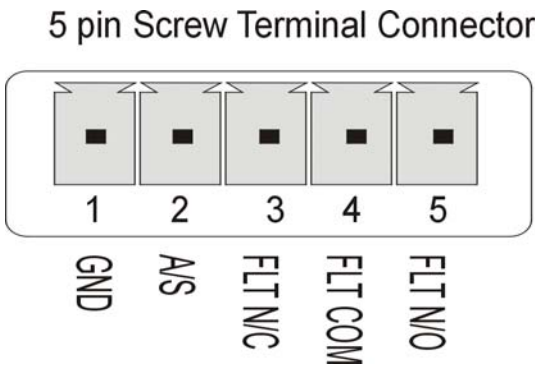


Figure 23: Pinouts for Presidium Mini I/O connector

3.7.1 Access/Secure Input

The Access/Secure input (pin 2) is used to put the Presidium Mini into the Access or Secure state. When in the Access state, alarm triggers are disabled for alarm inputs and VMD, however alarm input tamper, contrast, and no-video triggers are still enabled (unless disabled by the Alarm Isolate). When in the Secure state, all alarm triggers are enabled (unless otherwise disabled by the Alarm Isolate). The Fault Relay is not affected by this state.

The Access/Secure input allows the Presidium Mini to be independently set into the Access state of operation. This input is usually connected to an alarm panel or access control system.

The access/secure input is tamper protected (regardless of the access/secure state).

Note: If a tamper is generated on the Access / Secure input then all Presidium Mini channels will send an alarm.

When connected to a FastTrace / FastTx / FastTrace-R or third party DVR, the Access/Secure input must be set to Secure. The state is then controlled by the connected DVR.

The Access/Secure Input state may be:

- **Normally Open -** No End Of Line (NEOL) Resistor
- **Normally Closed**
- **Normally Open SEOL -** Single End Of Line Resistor
- **Normally Closed SEOL**
- **Normally Open DEOL -** Dual End Of Line Resistor
- **Normally Closed DEOL**.

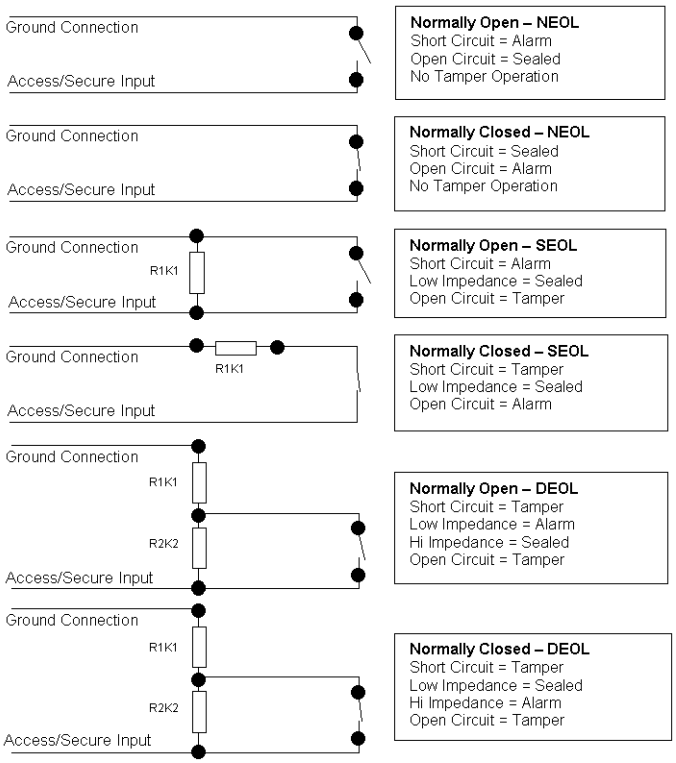


Figure 24: Access/Secure Input Configuration

3.7.2 Fault Relay

Presidium Mini has a fault relay, which is a Form C single pole changeover contact, available on pins 3, 4 and 5 of the General Inputs / Outputs connector. The relay has the following behaviour.

Table 3: Fault Relay

Unit State	Normally Closed (FLT NC) Pole	Normally Open (FLT NO) Pole
Power Off (Status LED is off)	Open	Closed
Unit powered on and is booting, i.e. the Status LED is on	Open	Closed
Operating Normally (Status LED is off)	Closed	Open
Any system fault is detected (Status LED is on)	Open	Closed

3.8 Network Communications

One 10/100Base -T network port (ETHERNET) is provided.

3.8.1 Network Connector LEDs

Integrated LED diodes in the network connectors are used to indicate LINK UP, LINK SPEED and LINK Activity as defined in the following table:

Note: ALWAYS consult with the IT or Network Manager for the network BEFORE physically connecting Presidium Mini to the network.

3.9 Status LEDs

The are two LEDs displaying the unit's condition: Power and Status.

- **Power LED**: The Power LED illuminates green when power is supplied to the Presidium Mini.
- **Status LED**: The Status LED illuminates red when a fault has been detected in the Presidium Mini (the fault relay is also activated) or during bootup.

The Presidium Mini also has 2 additional LED indicators to display which channel is in alarm.

4 Installation / Configuration

Before installing the ADPRO Presidium Mini, this section should be read thoroughly.

If any difficulties arise, contact your supplier or Xtralis Pty Ltd directly.

4.1 Unpacking

After unpacking the Presidium Mini, carefully check for any signs of damage. Any damage should be reported to your supplier, or to Xtralis Pty Ltd directly, before the Presidium Mini is installed.

Check that the packing carton contains the following items:

- 1 detachable power cord
- 1 regulated 12 V plug pack
- 1 I/O screw terminal connector to connect to the I/O connector (fitted to the unit)
- 1 EOL resistor pack
- 1 Presidium Mini Quick Setup Guide
- 1 ADPRO Product Installation and Upgrade CD
- 1 crossover Ethernet cable

4.2 Install Setup Utility

To set up the Presidium Mini for operation, it must be connected to a PC installed with the Presidium Setup Utility. The PC must also be configured with the required IP Address.

Note: If uninstalling the Presidium Setup Utility and reinstalling to a different directory, the **Presidium Setup Plugin** and the **Presidium Upgrade Plugin** must be uninstalled using Add/Remove Programs before reinstalling the Setup Utility.

To install the Presidium Setup Utility:

1. Insert the ADPRO Product CD into the PC to autorun and show the following screen.

Figure 25: Installation Screen

2. Select the **Attachments** button in the upper right corner and then install Presidium Mini setup software option.

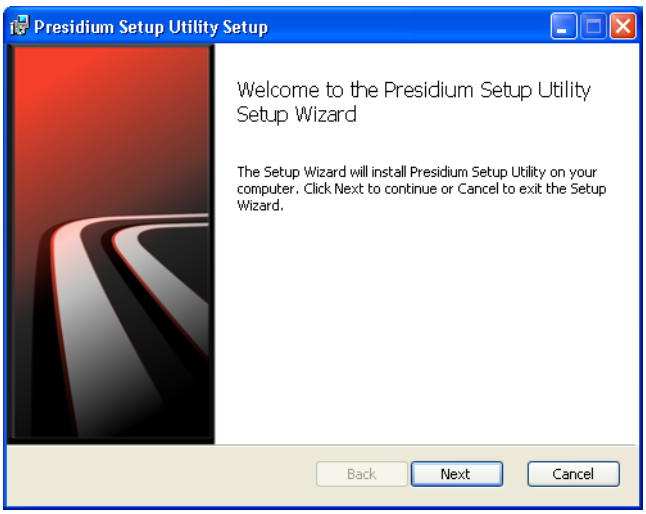

Presidium Setup Utility Setup
Welcome to the Presidium Setup Utility Setup Wizard
The Setup Wizard will install Presidium Setup Utility on your computer. Click Next to continue or Cancel to exit the Setup Wizard.
Back
Next
Cancel

Figure 26: Presidium Setup Utility

3. Select **Next**. The Licence Agreement is displayed.

Presidium Setup Utility Setup
End-User Licence Agreement
Please read the following licence agreement carefully
Licence Agreement
1 Grant of licence
Subject to this agreement, Xtralis grants the Licensee a non-transferable, non-exclusive licence to use the Software and Documentation for its internal business purposes in accordance with the terms of this agreement.
2 Restrictions on use
The Licensee must:
I accept the terms in the Licence Agreement
Print
Back
Next
Cancel

Figure 27: Presidium Licence Agreement

4. Accept the terms of the agreement and select **Next**. The Destination Folder screen is displayed.

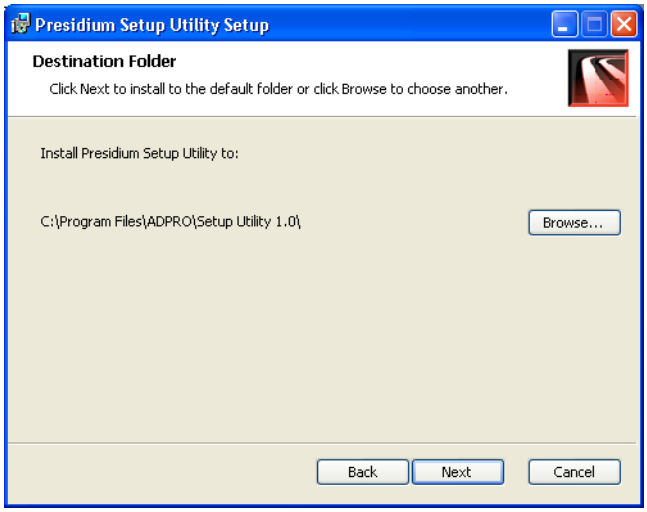


Figure 28: Choose Setup Type

5. Select **Next** to install the Setup Utility in the default folder, or select **Browse** to specify a different installation location.
6. Select **Install**. The Presidium Setup Utility commences installation.
7. Select **Finish** when the installation has completed. A shortcut to the setup utility is placed on the desktop.

4.3 Configure the PC Network Connections

The Presidium Mini has two factory IP addresses, 192.168.1.3 and 192.168.1.4.

The (factory) **subnet mask** address is 255.255.255.0

For the PC to be able to successfully connect to the Presidium Mini, the PC IP settings must be modified to a class C address on the 192.168.1.x subnet.

1. Select **Network Connections** from the Control Panel.
2. Double click on **Local Area Connection** (or other type of connection displayed).
3. Select **Properties**. The following screen is displayed.

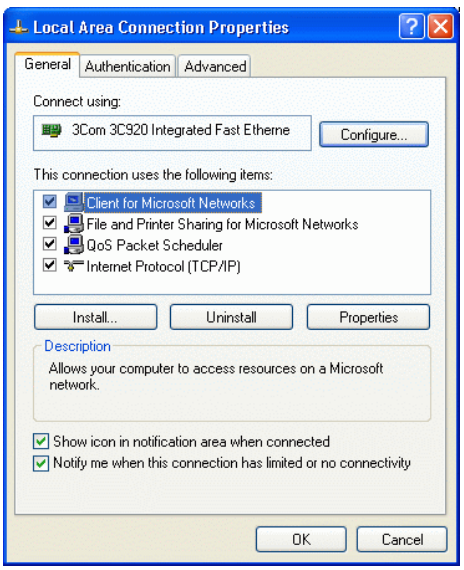


Figure 29: Local Area Connection Properties

4. Highlight **Internet Protocol (TCP/IP)** and select **Properties**. The following screen is displayed.

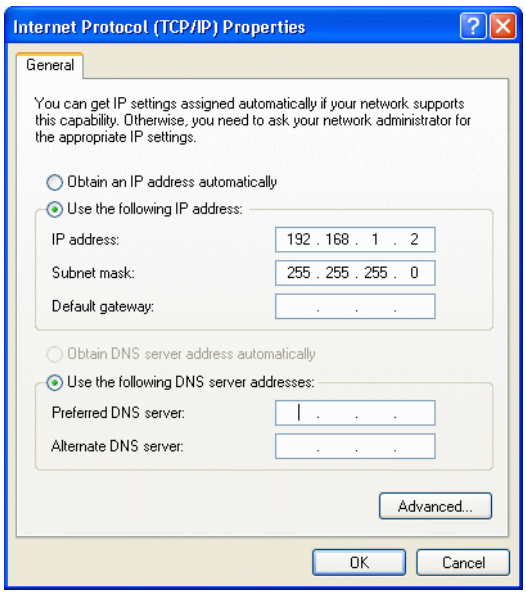

Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 192 . 168 . 1 . 2
Subnet mask: 255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

Figure 30: Internet Protocol Properties

5. Change the PC IP settings to the following: **192.168.1.2**
6. Set the subnet mask address to: **255.255.255.0**
7. Click **OK**, and the Local Area Connection Properties box is displayed again. Click **OK** and close the Network and Dial up Connections panel.

4.4 Configure Presidium Mini

Once the Presidium Setup Utility has been installed and the PC's network connection has been configured, use the following procedure to configure the Presidium Mini.

4.4.1 Connect to an Presidium Mini

4.4.1.1 Local Connection

1. Use the supplied crossover Category 5 Ethernet cable to connect the PC's network port to the **Ethernet** port.
2. Power on the Presidium Mini.
3. Double click on the **Presidium Setup Utility** icon on the PC desktop. The following screen is displayed.

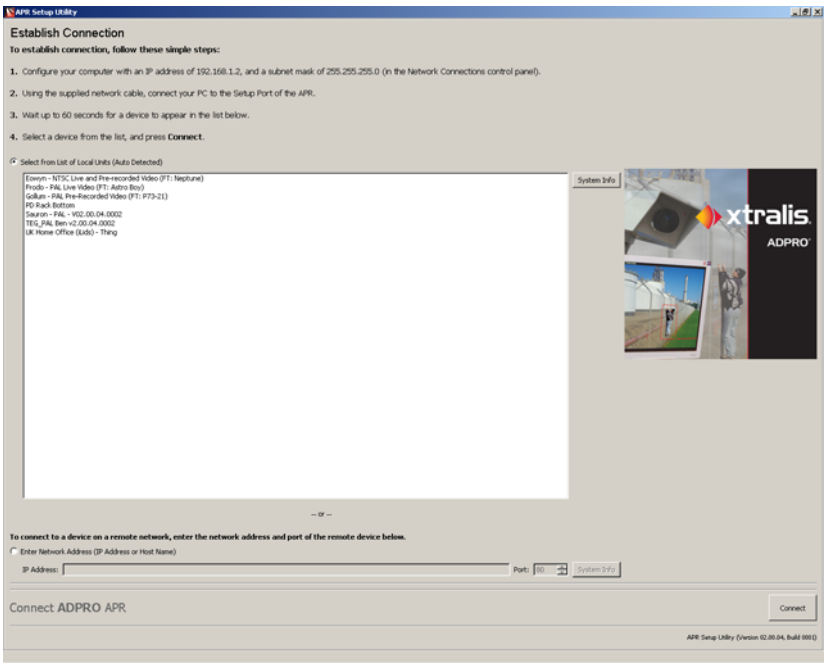

APR Setup Utility
Establish Connection
To establish connection, follow these simple steps:
1. Configure your computer with an IP address of 192.168.1.2, and a subnet mask of 255.255.255.0 (in the Network Connections control panel).
2. Using the supplied network cable, connect your PC to the Setup Port of the APR.
3. Wait up to 60 seconds for a device to appear in the list below.
4. Select a device from the list, and press Connect.
Select from List of Local Units (Auto Detected)
Eowyn - NTSC Live and Pre-recorded Video (FT: Neptune)
Frodo - PAL Live Video (FT: Astro Boy)
Golluns - PAL Pre-Recorded Video (FT: P73-21)
PD Rack Bottom
Sauron - PAL - V02.00.04.0002
TEG_PAL Ben-v2.00.04.0002
UK Home Office (Eido) - Thing
System Info
xtralis
ADPRO
-- or --
To connect to a device on a remote network, enter the network address and port of the remote device below.
Enter Network Address (IP Address or Host Name)
IP Address:
Port:
System Info
Connect ADPRO APR
Connect
APR Setup Utility (Version 02.00.04, Build 0001)

Figure 31: Establish Connection to the Presidium Mini

4. Wait for approximately 60 seconds for the connected device to appear in the List of Local Units (if the Presidium Mini is connected locally).

The default Presidium Mini IP address is 192.168.1.3 and the subnet mask is 255.255.255.0.

5. Highlight the required device and select **Connect**.

If the connected device does not appear in the list, check the following:

- Check the ethernet connection by ensuring the LEDs on the Setup port connector are illuminated (refer to Table 4 on page 43).

If the connected device appears in the list, but will not connect:

- Ensure the PC and Presidium Mini subnets match. If the PC has a static IP address on a different subnet to the Presidium Mini, they won't be able to connect (refer to *Configure the PC Network Connections* on page 41). Select the **System Info** button to display the Presidium Mini's IP address and subnet.

6. Once the connection to the Presidium Mini is established, the Password screen is displayed (refer to Section 4.4.3)

4.4.1.2 Remote Connection

1. Use the supplied crossover Category 5 Ethernet cable to connect the PC's network port to the **Ethernet** port.
2. Power on the Presidium Mini.
3. Double click on the **Presidium Setup Utility** icon on the PC desktop. The following screen is displayed.

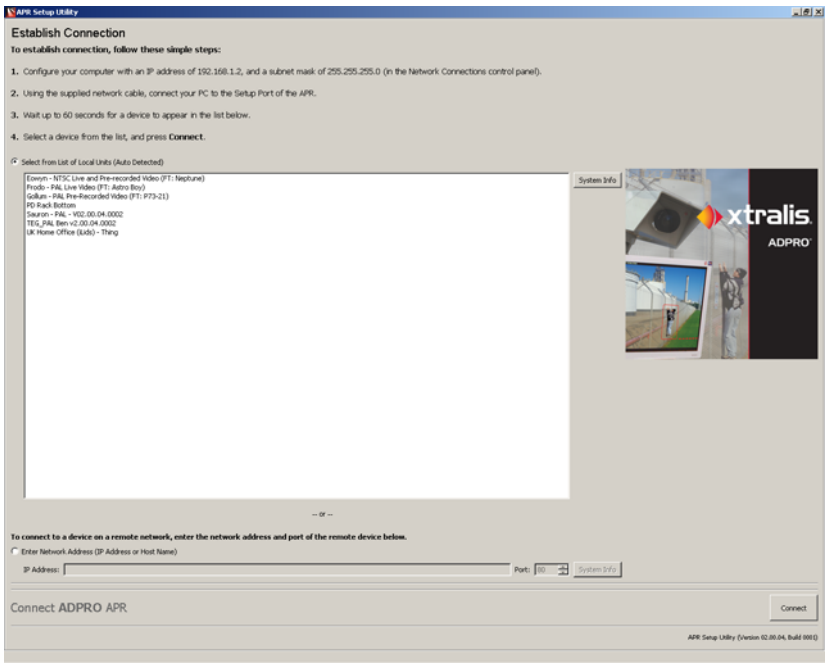

APR Setup Utility
Establish Connection
To establish connection, follow these simple steps:
1. Configure your computer with an IP address of 192.168.1.2, and a subnet mask of 255.255.255.0 (in the Network Connections control panel).
2. Using the supplied network cable, connect your PC to the Setup Port of the APR.
3. Wait up to 60 seconds for a device to appear in the list below.
4. Select a device from the list, and press Connect.
Select from List of Local Units (Auto Detected)
Eowyn - NTSC Live and Pre-recorded Video (FT: Neptune)
Frodo - PAL Live Video (FT: Astro Boy)
Gollum - PAL Pre-Recorded Video (FT: F73-21)
PD Rack Bottom
Sauron - PAL - V02.00.04.0002
TEG_PAL Ben v2.00.04.0002
UK Home Office (Ludo) - Thing
System Info
xtralis
ADPRO
-- or --
To connect to a device on a remote network, enter the network address and port of the remote device below.
Enter Network Address (IP Address or Host Name)
IP Address:
Port:
System Info
Connect ADPRO APR
Connect
APR Setup Utility (Version 02.00.04, Build 0001)

Figure 32: Establish Connection to the Presidium Mini

1. The Presidium Mini requires connection to two consecutive IP Address on Port Number 80. The default addresses are 192.168.1.3 and 192.168.1.4 (on Port 80)
2. While some network configurations may allow the use of two IP Addresses, other simple network configurations such as xDSL may not. To allow connection via simple xDSL services for example, the Port Redirection feature of the xDSL Router (connected to the Presidium Mini) can be used. This will cause two public ports to be redirected to the private Port 80 utilised for both addresses. Refer to Figure 33 for an example using a DrayTek xDSL Router of redirecting two public ports (in this example Port 81 and Port 82) to Port 80.
3. Once the router has been configured at **both end**s of the network, enter the xDSL IP Address and the first Port Number for the Remote Public Network (within the Presidium Setup Utility) and select the **Connect** button.

Note: The Presidium Mini IP Addresses can be change to suit the setup of the respective network.
The Presidium MiniPort Address cannot be changed.

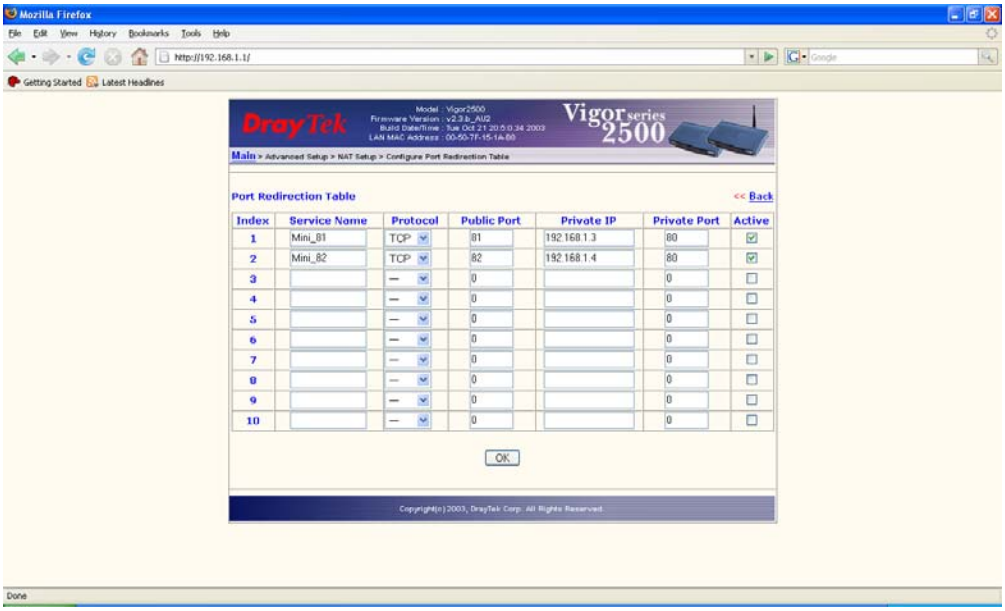


Figure 33: Port Redirection Example

4. Once the connection to the Presidium Mini is established, the Password screen is displayed (refer to Section 4.4.3)

4.4.2 Setup Utility No Activity Timer

The Presidium Setup Utility will automatically disconnect the connection to a Presidium Mini if no mouse movement is detected within a 5 minute period. This action is performed to ensure the Presidium Mini's detection is enabled.

Note: When the Setup Utility is connected to a Presidium Mini, the following outputs and on-screen monitor output displays are not updated. This means they will retain and display there last state.

- Target Trucks
- Target Bounding boxes
- Trigger areas
- Contrast level
- No video alarm
- Contrast alarm
- VMD alarm
- General alarm output

Presidium Mini detection is also disabled when Setup Utility is connected.

4.4.3 Using the Setup Utility

Figure 34: Enter Password

1. Enter the password;

   Enter username (default = **admin**) and password (default = **admin**), select **OK**.
   (Note that the defaults should be changed to a user defined a new username or password, refer to *Authentication* on page 62).The following screen is then displayed.

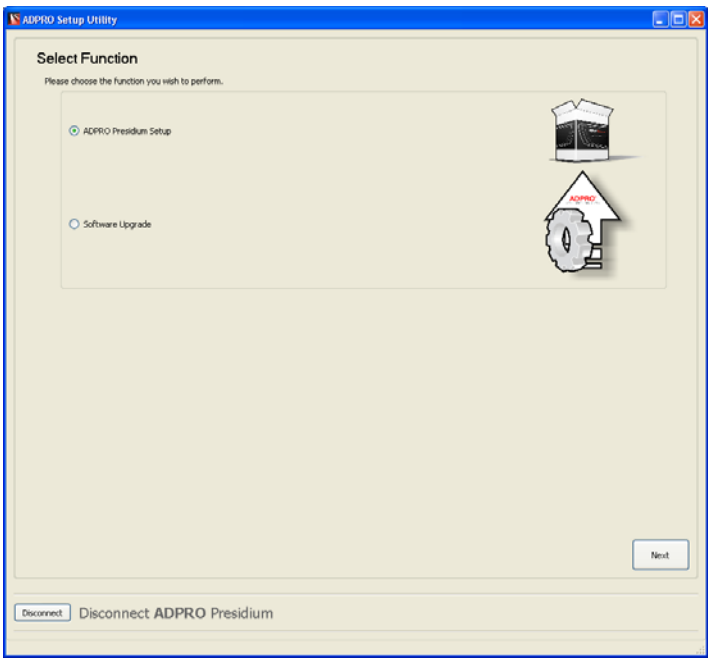


Figure 35: Select Function

2. Select the **ADPRO Presidium Setup** radio button and select **Next**.

If this is the first time this Presidium Mini has been connected to, the following screen is displayed.

Change Video Standard
Choose the video standard (PAL/NTSC) that matches the cameras connected to the Presidium.
When you press OK, the video standard plus any other changes you may have made will be saved to the Presidium.
PAL
OK
Cancel

Figure 36: Change Video Standard

This screen enables PAL or NTSC to be selected as the video standard.

3. Select the video standard of the cameras connected to the Presidium Mini and select **OK**.

The **Connect** button is used to enable a channel to detect alarm conditions.

To temporarily disable the use of a camera and any alarms that may be generated by it, the **Disconnect** button is used. For example, Disconnect can be set if maintenance is being performed on that camera, or if no camera is connected to that input.

The **Channel Status** area displays the settings that have been applied to this channel.

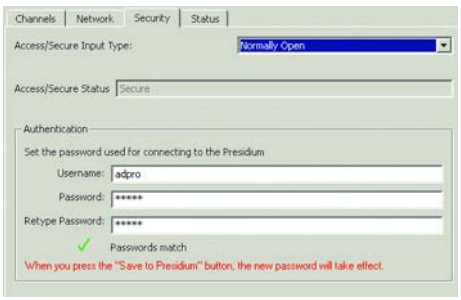
Selecting the **Change** button in the **Unit of Measure** section enables metres or feet to be selected as the displayed unit of measurement.

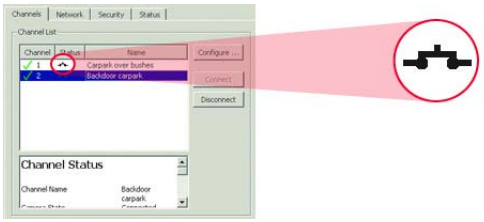
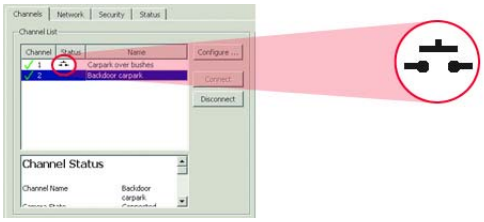
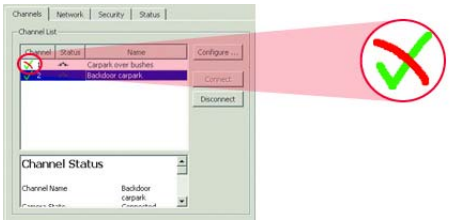
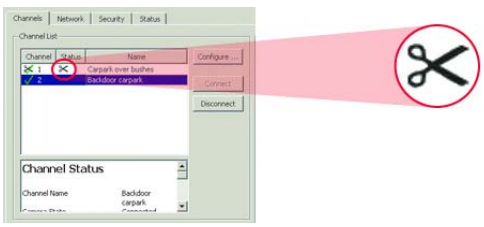
Selecting the **Change** button in the **Video Standard** section enables PAL or NTSC to be selected as the video standard.

Important: The Presidium Mini detection is disabled when the Presidium Setup Utilty is connected to the unit. Once the Presidium Mini has been programmed then ensure that the setup utility is disconnected and displaying the site list (refer to *Figure 31 – Establish Connection to the Presidium Mini* **on page 43).**

4.4.4 System Status

The status of the Access/Secure input, Alarm Inputs and Isolation Input can be determined through the Setup Utility GUI. Status information may be useful while commissioning or fault finding a Presidium Mini.

Access / Secure	

Alarm Sealed	
Alarm Unsealed	
Isolated	
Isolation with Alarm Input Tamper	

4.4.5 Configure Channels

Configuring the channels enables cameras, detection areas and alarm behaviour to be defined.

General Setup

1. Highlight the required channel and select **Configure**. The following screen is displayed.

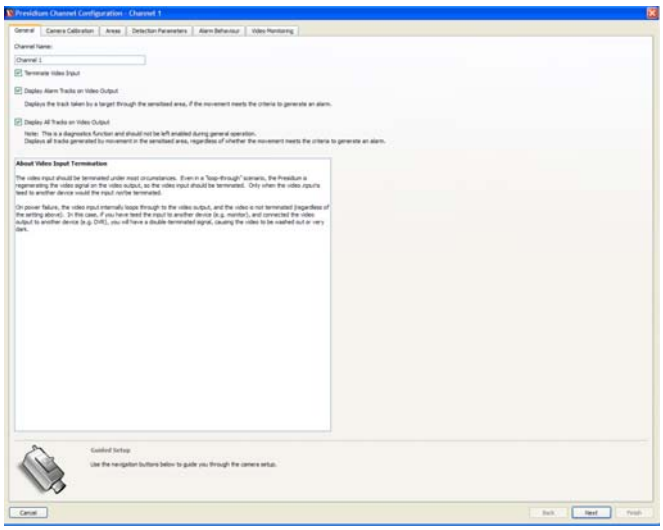


Figure 37: General Tab

Channel Name

Enter a name for this channel. The name is only displayed on the Setup screen, but not on the video output.

Terminate Video Input

Select this check box to terminate the camera in 75 ohms, unless the video input is teed off to another device. The video input should normally be terminated.

Display Alarm Tracks on Video Output

When this checkbox is selected, a track is displayed on the video output, showing the path taken by a target as it moves through the detection area. The track is only displayed once an alarm has been generated. Alarm tracks are displayed as red.

Display All Tracks on Video Output

When this checkbox is selected, a track is displayed on the video output, showing all registered objects that are moving in the detection area. These tracks are displayed as green.

A contrast level indicator is also displayed on the video output.

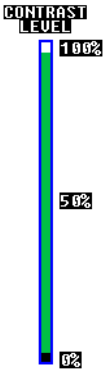


Figure 38: Contrast Level Indicator

The contrast level indicator shows the dynamic range of the video on the current channel, with black level at the base and peak white at the top.

The black portion at the base shows the unused levels at the lower range of the video signal. If there is no black at the base of the indicator then the black level of the video is correct. This can be changed by adjusting the camera's brightness level.

The green portion shows the active video range, and should ideally extend from the base of the indicator to near the top of the indicator in order to maximise detection capability.

The white portion at the top shows the unused levels at the upper range of the video signal. This can be changed by adjusting the camera's contrast level after the black level has been set.

Important: It is not recommended to enable the Display All Tracks function during general use of the Presidium Mini. It should only be used as a diagnostics tool when setting up the Presidium Mini.

1. Once all settings are selected, select **Next**. The following screen is displayed.

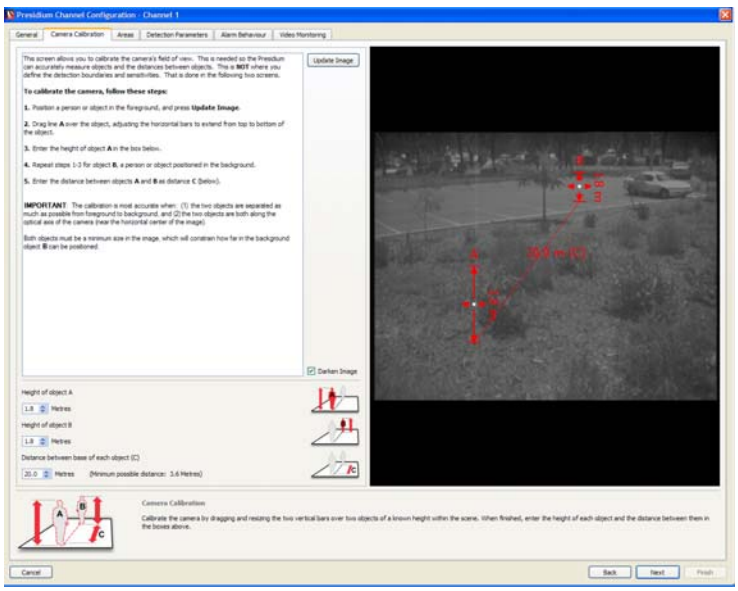


Figure 39: Camera Calibration

Camera Calibration

Camera calibration calibrates the dimensions and depth of field of the camera's field of view. Camera calibration is important to ensure that Presidium Mini can accurately determine target sizes. The detection areas and detection parameters are defined in the following sections.

To calibrate the camera:

1. Position a person or object in the foreground of the detection area and press **Update Image**.
2. Drag line A over the object, adjusting the horizontal bars to extend from the top to the base of the object. Ensure that the object is larger than the minimum height to which the line may be adjusted.
3. Enter the height of object A in the **Height of object A** box.

Note: An indicator of the position of object A should be retained, to enable the distance between object A and B to be measured.

4. Position a person or object in the background of the detection area and press **Update Image**.
5. Drag line B over the object, adjusting the horizontal bars to extend from the top to the base of the object. Ensure that the object is larger than the minimum height to which the line may be adjusted.
6. Enter the height of object B in the **Height of object B** box.
7. Enter the distance between the base of the two objects in the **Distance between base of each object (C)** box.

Note: The greater the distance from foreground to background of the two objects, the more accurate the camera calibration will be. This is because small inaccuracies in measurement are less significant over larger distances.

Note: The **Darken Image** checkbox increases the visibility of the calibration lines.

8. Select **Next**. The following screen is displayed.

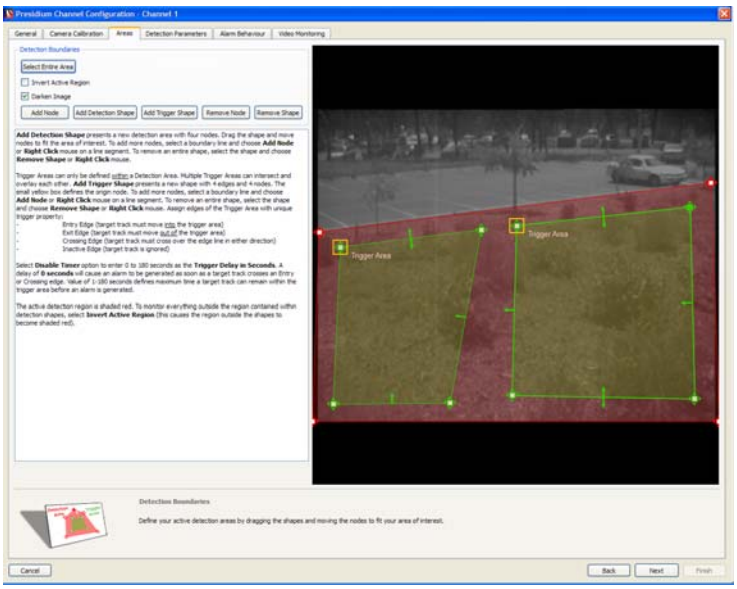


Figure 40: Areas

Areas

Defining the “detection” and “trigger” areas for a camera determines which areas of a camera’s field of view will generate a motion detection alarm. To reduce false alarms, areas of a camera view that contain trees, roads etc should, if possible, be excluded from detection or trigger areas.

Add Detection Shape

A Detection Shape is a special area (graphical shape) placed onto a camera view that is sensitive to target motion within its boundary lines. The parameters used to define and measure motion of a target within a Detection Shape are defined by the Detection Parameters (see section on page 55) and all detection parameters must be satisfied before a alarm event can be triggered. Targets outside of a Detection Shape are ignored.

Click on the **Add Detection Shape** button (or right click in the image) to place a new detection area on the image. The detection area is shown in red and is presented with four nodes. Use the mouse to move the position of the nodes to change the size and shape of the detection area.

To add more nodes, select a boundary line and press the **Add Node** button or right click on a line segment. To remove nodes, select **Remove Node** button or Right Click on a node. To remove an entire shape, select a shape and press **Remove Shape** or right click on a shape.

Add Trigger Shape

A Trigger Shape is a special area placed within a Detection Area. A Trigger Shape is sensitive to target track motion across its boundary lines. The user can select the particular type of target action (ie. direction) that must occur to trigger an alarm event.

A trigger shape can only be defined within a Detection Area. Multiple Trigger Areas can intersect and overlay each other.

Trigger Shapes provide enhanced target detection capability, for example:

Simple triggers - the target crosses one of the boundary lines

Directional triggers - the target crosses two of the boundary lines

Loiter triggers - the target crosses one boundary and moves within the area for a preset period or the target simply “appears” or “disappears” (see *Trigger Area Properties*)

Click on **Add Trigger Shape** or right click on a detection area to add a new trigger shape. Move the position of the nodes or **Add Nodes** to change the size and shape of the trigger area. To remove entire shape, select a shape and press **Remove Shape** or right click on a shape.

A new trigger shape is presented as a square with 4 edges and 4 nodes. A small yellow box will define the origin node. Each edge of the Trigger Area can be assigned a unique trigger property;

- *Entry Edge* (target track must move into the trigger area)
- *Exit Edge* (target track must move out of the trigger area)
- *Crossing Edge* (target track must cross over the edge line in either direction)
- *Disable Edge* (target track is ignored)

By default a new trigger area has:

- All edges disabled.
- The Enable Timer set to inactive. This means that no timer function is enabled and alarm triggers are only defined by the Edge properties (ie target tracks must pass through two edges to generate an alarm).

Note: The default trigger area needs to be programmed by defining edge properties and area properties before it will detect target activity.

Trigger Area Properties

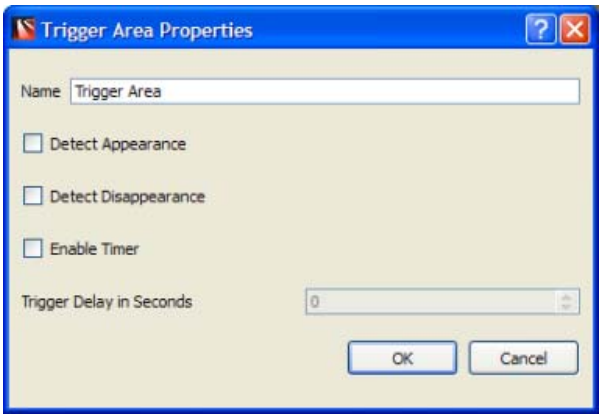


Figure 41: Trigger Area Properties

Trigger Areas can be given a unique Name to assist with identification. Attached to each trigger area are options to:

Detect Appearance: Select this option if an alarm is to be generated when a target appears, but has not entered the trigger area by crossing an edge.

Detect Disappearance: Select this option if an alarm is to be generated when a tracked target "disappears" from the trigger area (for example, hides behind a pillar) or stops moving.

Enable Timer: By selecting the **Enable Time**r option, a value of 0 to 180 seconds can be entered as the **Trigger Delay in Seconds**. A timer delay of 0 seconds will cause an alarm to be generated as soon as a target track crosses an Entry or Crossing edge. A value of 1-180 seconds defines the maximum time a target track can remain within the trigger area before an alarm is generated.

The entire field of view of a Detection Area may be selected using the **Select Entire Area** button.

The **Invert Active Region** checkbox selects the previously unselected part of the detection area.

The **Darken Image** checkbox increases the visibility of the detection area lines.

When a Trigger Area is selected using the right mouse click an option will be present in the drop down list to duplicate the current selected shape including properties. Using this option may decrease setup time when requiring multiple Trigger Area shapes that are simular in shape and properties.

The following figure defines the Logic used to generate VMD alarms. It is important to note that Trigger Areas require 2 events before an alarm is generated.

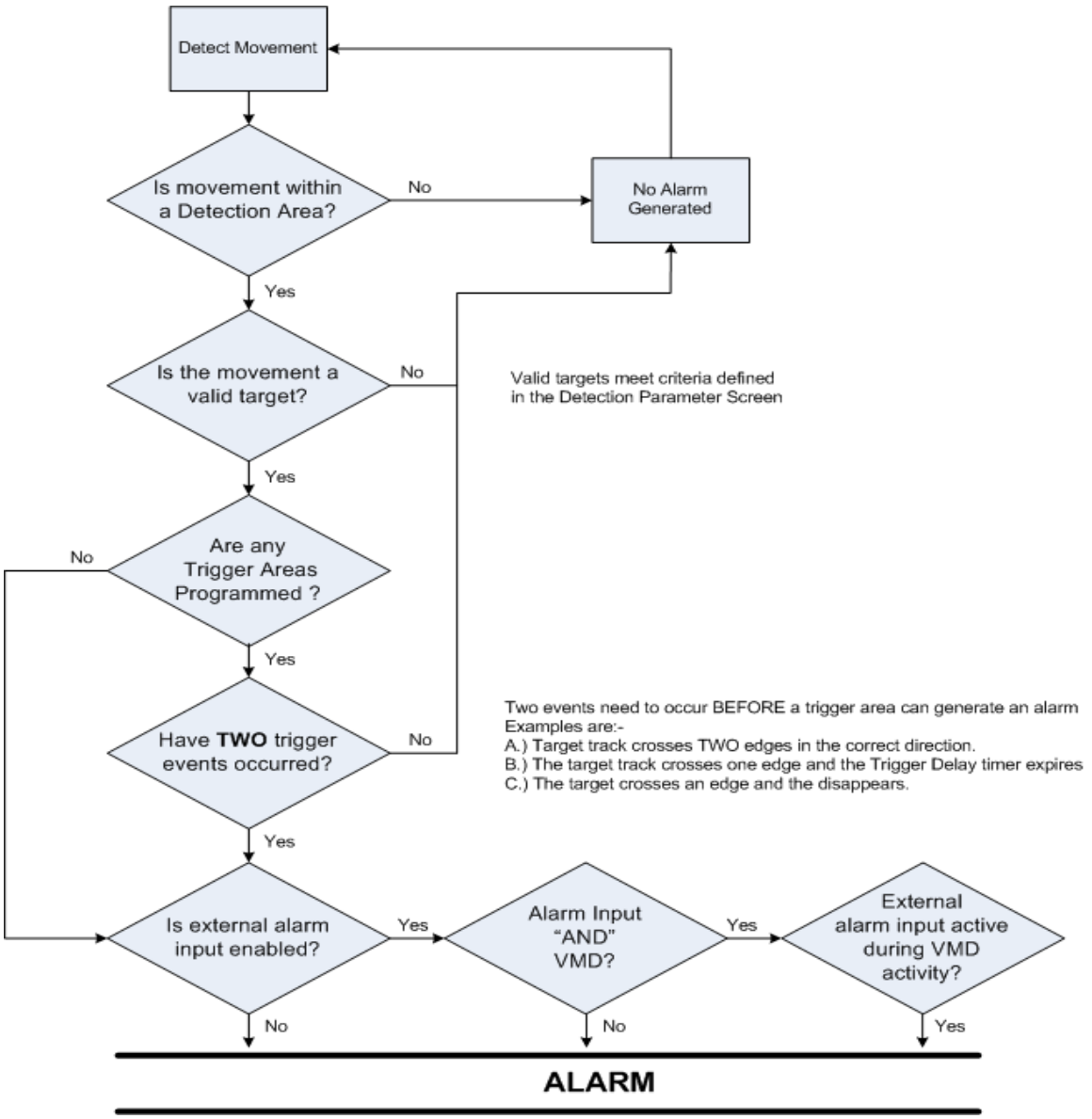

Detect Movement
Is movement within a Detection Area?
No
No Alarm Generated
Yes
Is the movement a valid target?
No
Valid targets meet criteria defined in the Detection Parameter Screen
Yes
Are any Trigger Areas Programmed ?
No
Yes
Have TWO trigger events occurred?
No
Two events need to occur BEFORE a trigger area can generate an alarm
Examples are:-
A.) Target track crosses TWO edges in the correct direction.
B.) The target track crosses one edge and the Trigger Delay timer expires
C.) The target crosses an edge and the disappears.
Yes
Is external alarm input enabled?
Yes
Alarm Input "AND" VMD?
Yes
External alarm input active during VMD activity?
No
No
Yes
ALARM

Figure 42: Alarm Logic

Once all required areas have been defined, select the **Next** button. The following screen is displayed.

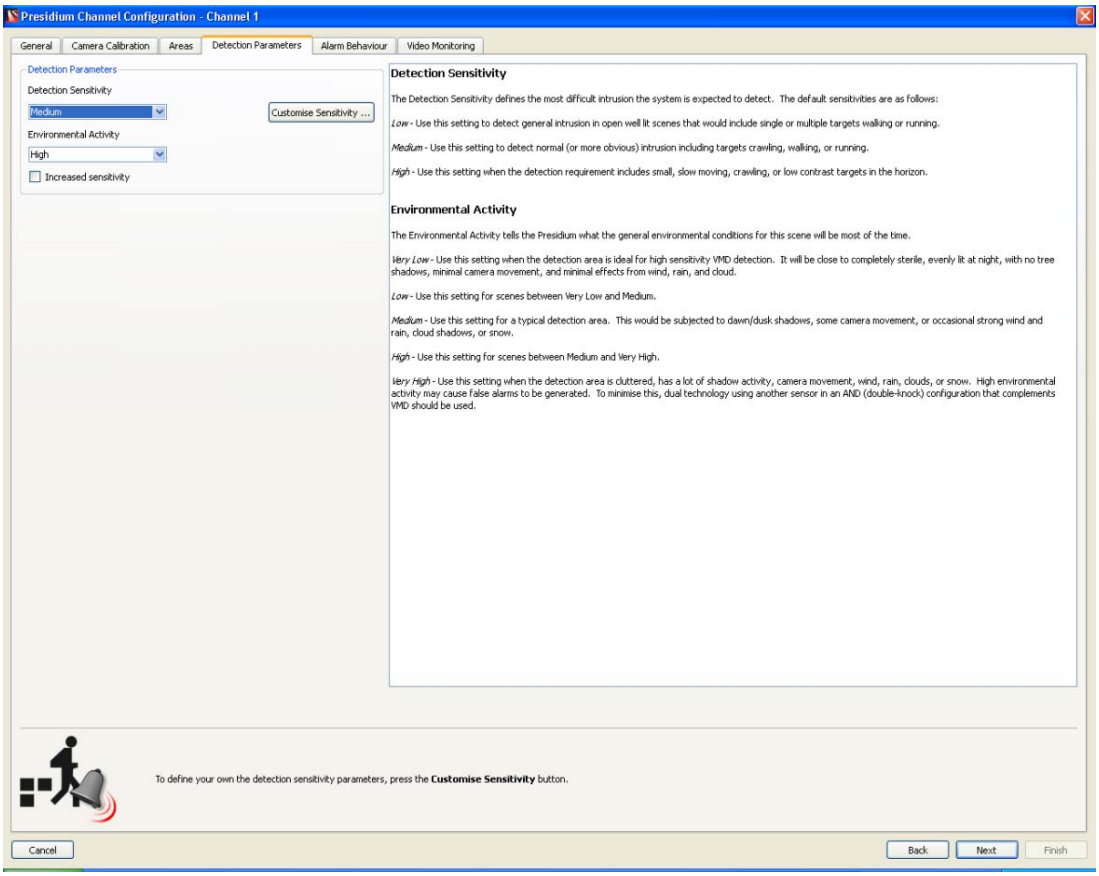

Presidium Channel Configuration - Channel 1
General
Camera Calibration
Areas
Detection Parameters
Alarm Behaviour
Video Monitoring
Detection Parameters
Detection Sensitivity
Medium
Customise Sensitivity ...
Environmental Activity
High
Increased sensitivity
Detection Sensitivity
The Detection Sensitivity defines the most difficult intrusion the system is expected to detect. The default sensitivities are as follows:
Low - Use this setting to detect general intrusion in open well lit scenes that would include single or multiple targets walking or running.
Medium - Use this setting to detect normal (or more obvious) intrusion including targets crawling, walking, or running.
High - Use this setting when the detection requirement includes small, slow moving, crawling, or low contrast targets in the horizon.
Environmental Activity
The Environmental Activity tells the Presidium what the general environmental conditions for this scene will be most of the time.
Very Low - Use this setting when the detection area is ideal for high sensitivity VMD detection. It will be close to completely sterile, evenly lit at night, with no tree shadows, minimal camera movement, and minimal effects from wind, rain, and cloud.
Low - Use this setting for scenes between Very Low and Medium.
Medium - Use this setting for a typical detection area. This would be subjected to dawn/dusk shadows, some camera movement, or occasional strong wind and rain, cloud shadows, or snow.
High - Use this setting for scenes between Medium and Very High.
Very High - Use this setting when the detection area is cluttered, has a lot of shadow activity, camera movement, wind, rain, clouds, or snow. High environmental activity may cause false alarms to be generated. To minimise this, dual technology using another sensor in an AND (double-knock) configuration that complements VMD should be used.
To define your own the detection sensitivity parameters, press the Customise Sensitivity button.
Cancel
Back
Next
Finish

Figure 43: Detection Parameters

Detection Parameters

The Detection Parameters enables the detection sensitivity of the Presidium Mini channels to be adjusted.

Detection Sensitivity

This setting adjusts the sensitivity of the channel to movement within the detection area. This setting defines the level of intrusion being guarded against.

There are three default levels of sensitivity: low, medium and high. If detection problems are experienced with the default levels, it is possible to customise a new sensitivity level, however, the default levels should normally be used.

Please refer to the on-screen descriptions for guidance on the setting to use, based on the camera view.

Environmental Activity

This setting defines how busy the background scene of the detection area is generally likely to be. Ideally, there should be very little activity (caused by car headlights, trees etc.) in the background, to avoid false alarms. Please refer to the on-screen descriptions for guidance on the setting to use, based on the camera view.

If a cluttered background scene is unavoidable, it is recommended that motion detection be combined with another method of alarm generation (e.g. PIR, microwave detector or fence sensor). Both motion detection AND the alarm input must be triggered before an alarm is generated. This is configured on the next screen (Alarm Behaviour).

Defining trigger areas can also be used to minimise nuisance alarms in these circumstances.

Please refer to the on-screen descriptions for guidance on the setting to use, based on the camera view.

Increased Sensitivity

To increase the sensitivity of detection under ***constant lighting*** conditions, tick the Increased Sensitivity" check box. Constant lighting usually refers to ***indoor*** locations where there is little change in the lighting level and contrast of a camera view.

Customise Sensitivity

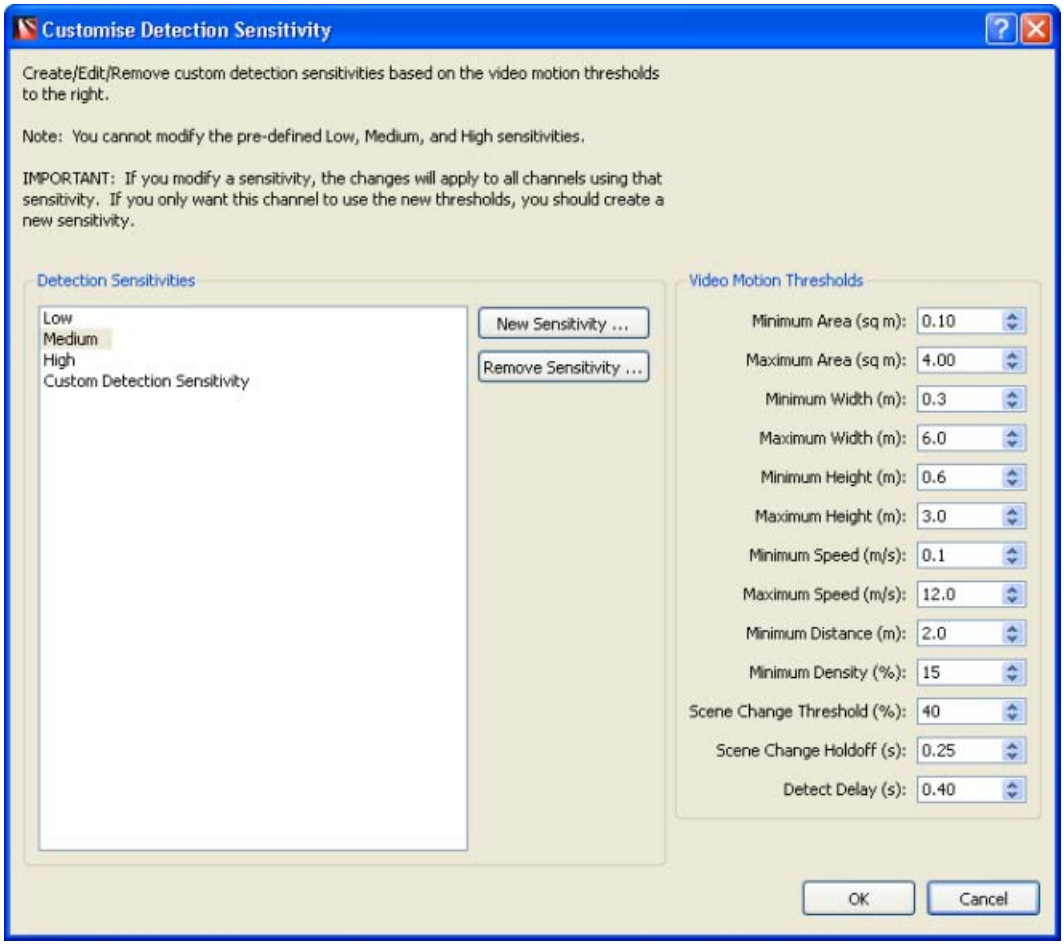

Customise Detection Sensitivity
Create/Edit/Remove custom detection sensitivities based on the video motion thresholds to the right.
Note: You cannot modify the pre-defined Low, Medium, and High sensitivities.
IMPORTANT: If you modify a sensitivity, the changes will apply to all channels using that sensitivity. If you only want this channel to use the new thresholds, you should create a new sensitivity.
Detection Sensitivities
Low
Medium
High
Custom Detection Sensitivity
New Sensitivity ...
Remove Sensitivity ...
Video Motion Thresholds
Minimum Area (sq m): 0.10
Maximum Area (sq m): 4.00
Minimum Width (m): 0.3
Maximum Width (m): 6.0
Minimum Height (m): 0.6
Maximum Height (m): 3.0
Minimum Speed (m/s): 0.1
Maximum Speed (m/s): 12.0
Minimum Distance (m): 2.0
Minimum Density (%): 15
Scene Change Threshold (%): 40
Scene Change Holdoff (s): 0.25
Detect Delay (s): 0.40
OK
Cancel

Figure 44: Customise Detection Sensitivity

This window may be used to create a customised sensitivity level or to edit an existing custom level.

Note: The standard Low, Medium and High sensitivity levels may not be modified or deleted.

To create a customised sensitivity level:

1. Highlight the sensitivity level on which the new level is to be based.
2. Select **New Sensitivity**.
3. Enter a name for the new sensitivity level and select **OK**.
4. Modify the **Video Motion Thresholds** on the right side of the window as required (values outside of the valid ranges may not be entered).
5. Select **OK**. The window closes and the new level is selected for this channel.

To remove a (previously created) customised sensitivity:

1. Highlight the custom level to be removed.
2. Click the *Remove Sensitivity* button
3. Click Yes

To modify a custom level:

1. Highlight the custom level to be modified.
2. Modify the Video Motion Thresholds on the right side of the window as required (values outside of the valid ranges will not be able to be entered).
3. Select **OK**. The window closes and the modified level is selected for this channel.

Table 4: Video Motion Thresholds Explanation

Threshold	Explanation
Minimum Area (sq m)	The minimum area in square metres an object must be* to generate an alarm.
Maximum Area (sq m)	The maximum area in square metres an object must be* to generate an alarm.
Minimum Width (m)	The minimum width in metres an object must be* to generate an alarm.
Maximum Width (m)	If an object is wider than this measurement* it is deemed too large to generate an alarm.
Minimum Height (m)	The minimum height in metres an object must be* to generate an alarm.
Maximum Height (m)	If an object is higher than this measurement* it is deemed too large to generate an alarm.
Minimum Speed (m/s)	The minimum velocity in metres per second that an object may be to generate an alarm.
Maximum Speed (m/s)	The maximum velocity in metres per second that an object may be to generate an alarm.
Minimum Distance (m)	The minimum distance in metres that a motion detection track must be to cause an alarm. Note: If the intruder has taken a meandering path, the track length is measured as the crow flies, and not along their entire distance of travel.
Minimum Density (%)	The minimum allowed ratio of motion detection pixels to bounding box area for each tracked object. For example, the bounding box area for a tree may be very large if there is movement at the extremity of the branches, but the number of motion detection pixels through the rest of the box may be small, whereas a moving human will generate a large number of detection pixels for a relatively small bounding box.
Scene Change Threshold (%)	If the scene changes by the percentage specified, the scene learning mechanism is retriggered. This may prevent nuisance alarms caused by sudden changes in lighting levels, eg. when lights are turned on at night. Note: It should not be necessary to change this value with normal use.
Scene Change Holdoff (s)	The scene change percentage specified above must exist for this length of time before the scene is relearnt. Note: It should not be necessary to change this value with normal use.
Detect Delay (seconds)	A track needs to continue to meet the size, area, velocity, and density criteria for this duration before an alarm will be generated. The remaining criteria must also be met before an alarm can be generated.

(*) Subject to the figure entered in the Detect Delay parameter.

Note: The above thresholds may also be displayed in feet (depending on the selection made in **Camera Calibration / Display Units**).

1. Once the Detection Parameters have been defined, select **Next**. The following screen is displayed.

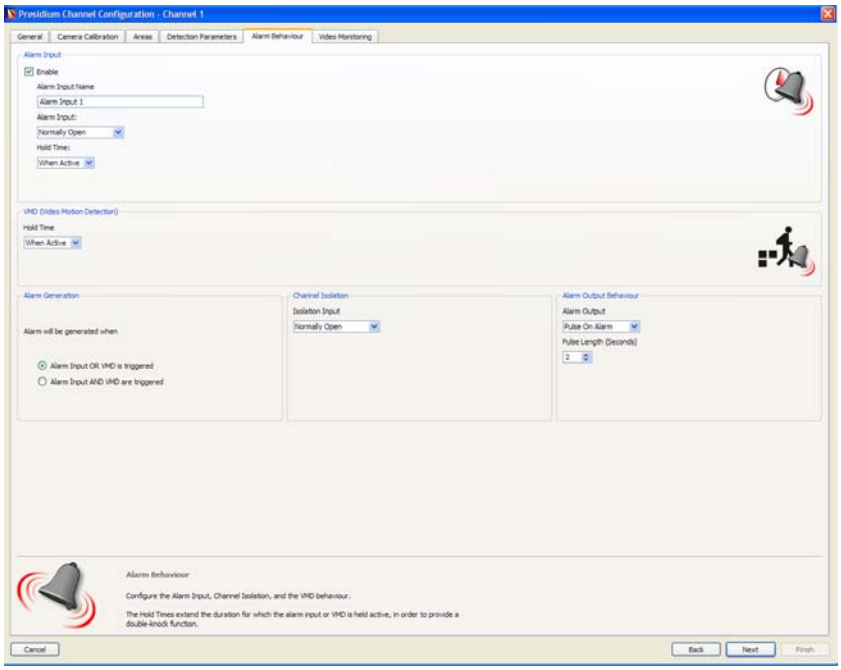


Figure 45: Alarm Behaviour

Alarm Behaviour

The Alarm Behaviour screen enables the configuration of the alarm input, VMD behaviour and channel isolation.

Alarm Input

1. Check the **Enable** checkbox if a second detection technology/device (e.g. PIR, microwave detector or fence sensor) is connected to this channel.
2. Enter a descriptive name for the alarm input in the **Alarm Input Name** box. This name is displayed on the Setup screen, but is not communicated to FastTrace / FastTx / FastTrace-R or VideoCentral (if connected).
3. Select the type of the Alarm Input:
   - **Normally Open -** No End Of Line (NEOL) Resistor
   - **Normally Closed**
   - **Normally Open SEOL -** Single End Of Line Resistor
   - **Normally Closed SEOL**
   - **Normally Open DEOL -** Dual End Of Line Resistor
   - **Normally Closed DEOL**.
4. Select the required **Hold Time** for the alarm input.

The Hold Time determines the length of time that a triggered alarm input is active when being ANDed with VMD to generate an alarm (double-knock method). The Hold Time commences when the alarm input has stopped triggering. A VMD alarm must be triggered within the Hold Time for an alarm to be generated.

Any tamper condition on the alarm input will generate an alarm and activate the general alarm relay.

Note: An alarm input or input tamper alarm will not be generated if the channel is isolated.

VMD (Video Motion Detection)

1. Select the required **Hold Time** for the VMD.

See the explanation of Hold Time above.

Alarm Generation

An alarm may be generated when an alarm input OR VMD is triggered; or alternatively, when an alarm input AND VMD is triggered.

The AND function should be used if the background of the detection area has high environmental activity.

Channel Isolation

Isolating a channel prevents that channel from generating alarms. This feature is useful in a number of scenarios:

- Commissioning a Presidium Mini
- Fault finding an installation
- Configuring detectors
- Disabling faulty detectors

1. Select the type of the Isolation Input:
   - **Normally Open -** No End Of Line (NEOL) Resistor
   - **Normally Closed**
   - **Normally Open SEOL -** Single End Of Line Resistor
   - **Normally Closed SEOL**
   - **Normally Open DEOL -** Dual End Of Line Resistor
   - **Normally Closed DEOL**.

Note: Any tamper on the isolation input will generate an alarm and activate the general alarm relay.

Alarm Output Behaviour

The way that the alarm output behaves can be set.

1. Select the behaviour options required:
   - **When Alarm active** - the output is active while the alarm condition is present
   - **Pulse on Alarm** - a specific time duration may be defined by “Pulse Length”.

Pulse Length (seconds) is only available for the “Pulse on Alarm” behaviour option. It can be set between 1 and 60 seconds.

2. Once all settings are complete, select **Next**.

The following screen is displayed.

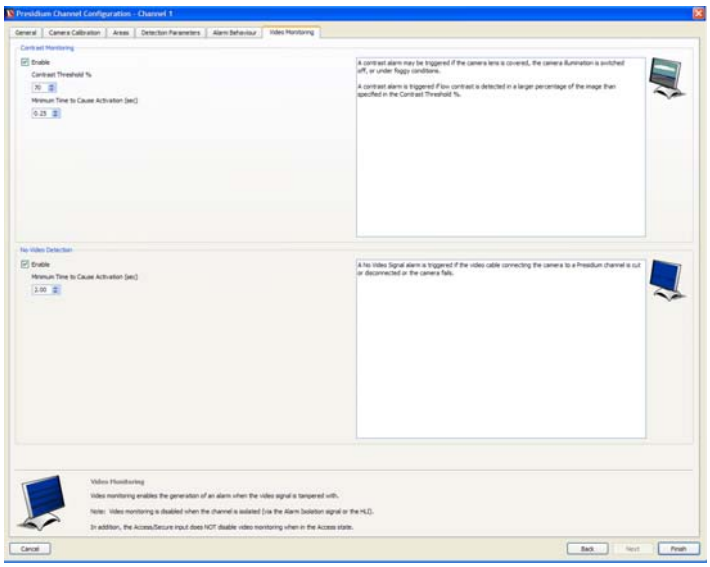


Figure 46: Video Monitoring

Video Monitoring

Video Monitoring enables the generation of an alarm when the video signal is tampered with or a camera develops a fault.

Contrast Monitoring

The Contrast Monitoring feature is provided as a check that the contrast of the camera image is acceptable. The settings allow detection of unusually low contrast levels.

A contrast level indicator may be displayed on the video output, refer to *Display All Tracks on Video Output* on page 49 for instructions.

A contrast alarm is triggered if low contrast is detected in a larger percentage of the image than specified in the Contrast Threshold %.

Note: The contrast must be below the threshold for the entire duration defined in the **Minimum Time to Cause Activation** setting for a contrast alarm to be generated.

A low contrast alarm will be generated for both the following situations:

- the camera is ‘bagged’ by placing an opaque material over the lens, causing the image to go dark
- the camera has a very bright light shone into the lens, causing the image to flare and ‘whiteout’

Note: A contrast alarm will not be generated if the channel is isolated.

No-Video Detection

When checked, Presidium Mini will generate an alarm in the event of lost video on this camera channel, for the defined time, due to camera disconnection or output failure.

Note: A no-video alarm will not be generated if the channel is isolated.

1. Once all Video Monitoring settings are complete, select **Finish**.
2. Repeat the channel configuration for all channels.

Once all channels are configured, the following optional settings may be adjusted.

4.4.6 Network Tab

The Network screen enables a device name to be entered and the Presidium Mini IP address to be changed, if required.

Device Name

The Device Name will be displayed in the list of local units when connecting to a Presidium Mini (refer to Figure 31).

IP Address Configuration

Note: If the Presidium Mini is to be connected to a FastTrace / FastTx / FastTrace-R, a static address in the same range, with the same subnet mask as the FastTrace / FastTx / FastTrace-R, must be entered, (refer to *Connection to Xtralis ADPRO AFT / AFTX / AFTR* on page 79 for more details).

Select the **Configure...** button to display the IP Address Configuration screen.

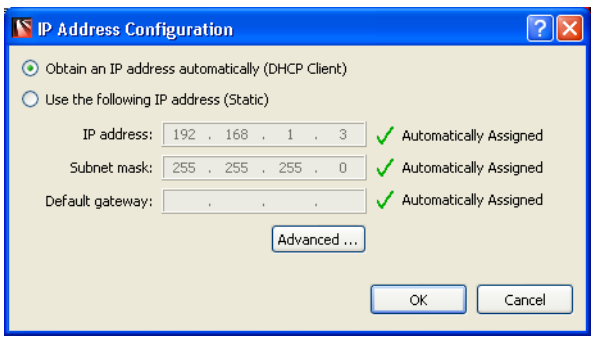


Figure 47: IP Address Configuration

Note: **Presidium Mini** has two IP addressses. The second IP address is automatically assigned to the next address when static IP addressing is used.

The port used to accept connections may be changed, if required. By default, the port used is port 80. The valid port range is 80 - 65535 (excluding 88 and 20001 - 20004). The default port should be used in most installations.

4.4.7 Security Tab

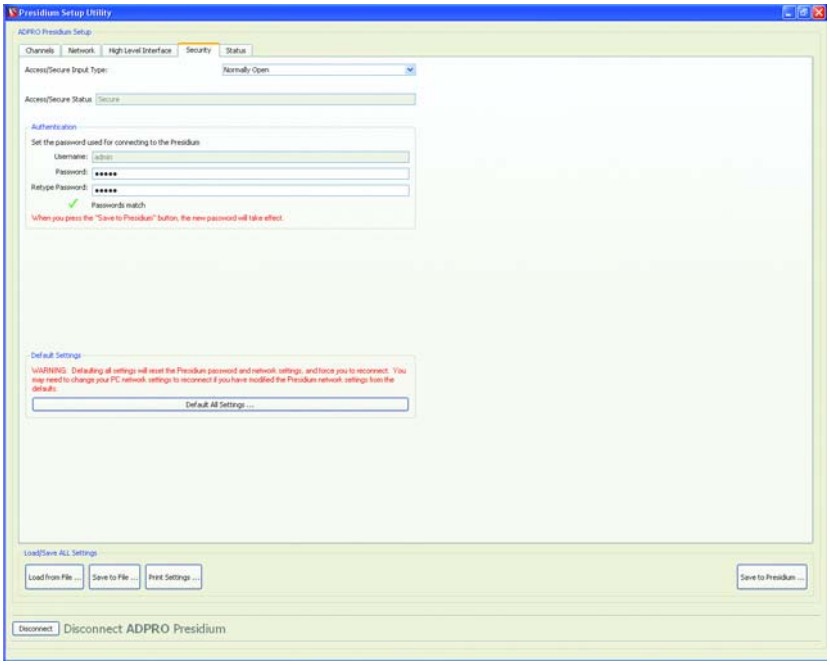

Presidium Setup Utility
ADPRO Presidium Setup
Channels
Network
High Level Interface
Security
Status
Access/Secure Input Type:
Normally Open
Access/Secure Status:
Secure
Authentication
Set the password used for connecting to the Presidium
Username:
admin
Password:
Retype Password:
Passwords match
When you press the "Save to Presidium" button, the new password will take effect.
Default Settings
WARNING: Defaulting all settings will reset the Presidium password and network settings, and force you to reconnect. You may need to change your PC network settings to reconnect if you have modified the Presidium network settings from the defaults.
Default All Settings ...
Load/Save ALL Settings
Load from File ...
Save to File ...
Print Settings ...
Save to Presidium ...
Disconnect
Disconnect ADPRO Presidium

Figure 48: Security Tab

Access/Secure Input Type

The Access/Secure input allows the Presidium Mini to be independently set into the Access state of operation. This input is usually connected to an alarm panel or access control system.

Refer to *Access/Secure Input* on page 40 for more information.

1. Select the type of the Access/Secure Input:
   - **Normally Open -** No End Of Line (NEOL) Resistor
   - **Normally Closed**
   - **Normally Open SEOL -** Single End Of Line Resistor
   - **Normally Closed SEOL**
   - **Normally Open DEOL -** Dual End Of Line Resistor
   - **Normally Closed DEOL**.

Note: If the Presidium Mini is to be connected to a FastTrace / FastTx / FastTrace-R, ensure the Access/Secure input is set in the default state of **Normally Open** and that nothing is connected to this input. This ensures the Presidium Mini is in the **Secure** state at all times and access is controlled at the FastTrace / FastTx / FastTrace-R.

Authentication

Presidium Mini requires a Username and Password for setup or software upgrade.

The default password (and username) is ‘admin’, this should be changed to a user defined password.

The new password takes effect once the **Save to Presidium...** button is pressed.

Default Settings

The **Default All Settings** button resets the channel, password and network settings. It also disconnects the Presidium Mini.

Note: To reconnect to the Presidium Mini, it may be necessary to change the PC network settings, if the Presidium Mini network settings have been previously modified.

4.4.8 Status Tab

The Status screen displays the value of all settings that have been entered for each channel.

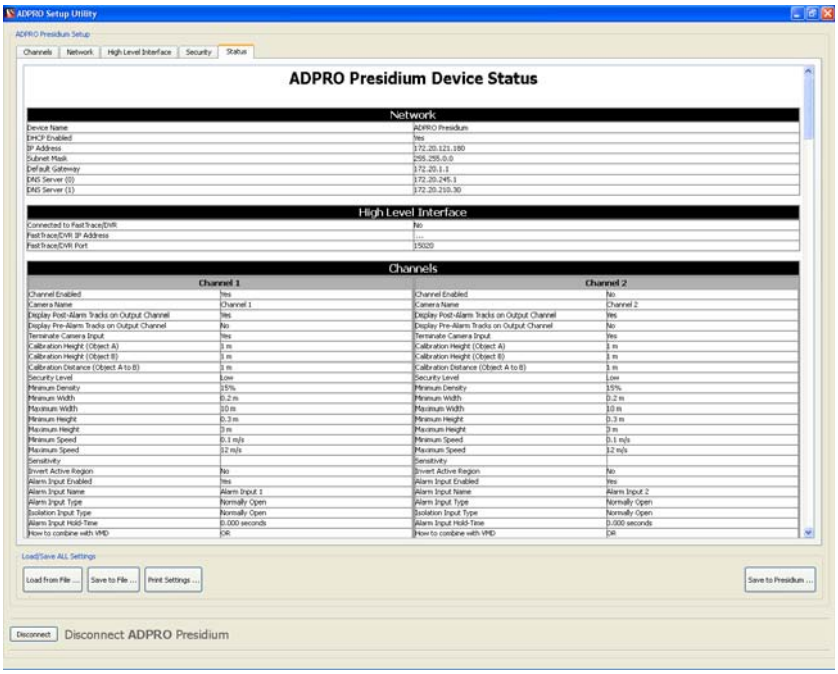


Figure 49: Status Tab

4.5 Saving the Site Records

4.5.1 Saving a Configuration to File

Selecting the **Save to File** button at any time will cause all settings currently within the Presidium setup utility software to be saved to a file on the PC (a confirmation box will be presented to verify the required action).

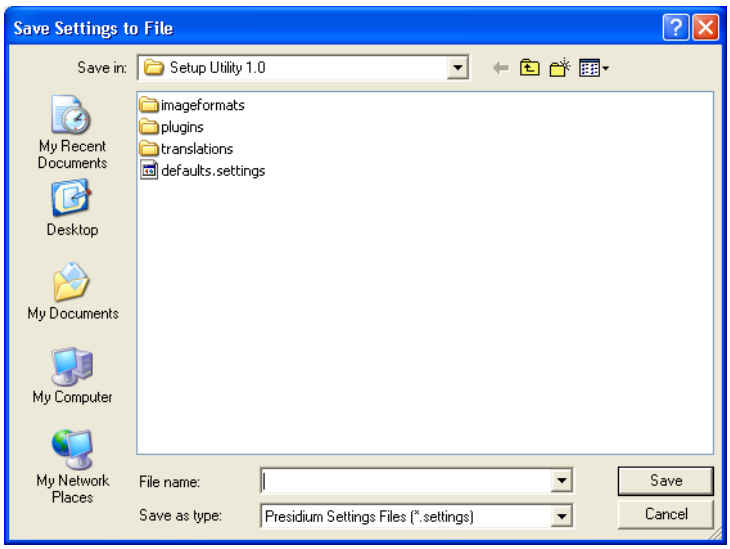


Figure 50: Save to File

This enables the complete configuration to be saved. This may then be reloaded in the case of a system malfunction or used to configure another system.

The configuration is saved as a .settings file in a user defined location on the PC.

4.5.2 Loading a Configuration from File

Selecting the **Load from File** button displays the Load Settings from File window.

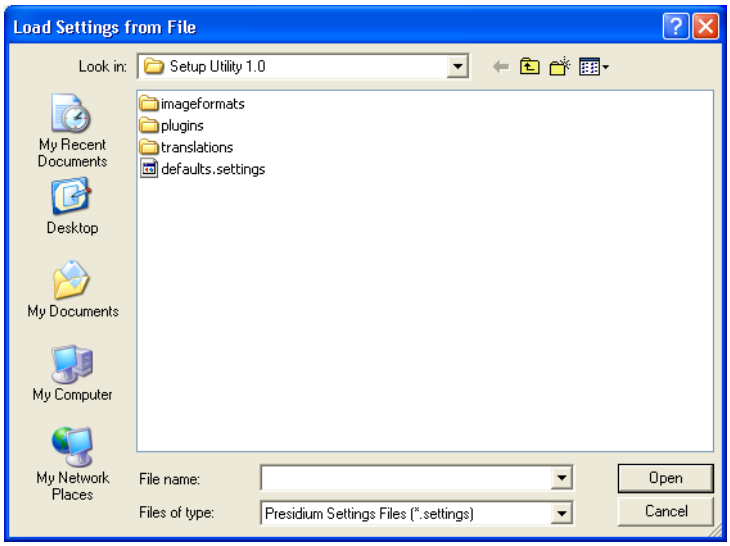


Figure 51: Load Settings from File

1. Navigate to the required .settings file and select **Open**.
2. Select the **Save to Presidium...** button.

The saved configuration is uploaded to the connected Presidium Mini.

Note: It is not possible to load settings from a Setting File created by an older version of the Presidium firmware. If Presidium Mini is upgraded then a new settings file should be saved after the upgrade is completed.

4.5.3 Printing the Site Configuration

Selecting the **Print Settings** button displays the following screen.

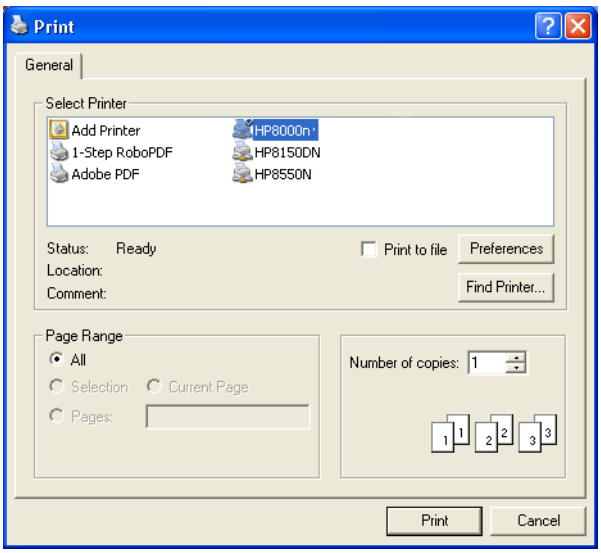


Figure 52: Print Settings

Printing the site configuration produces a print out of all channel settings, as displayed in the Status tab (refer to *Status Tab* on page 63).

4.5.4 Upgrading Presidium Mini Software

Ensure the Presidium Setup Utility is first upgraded to the latest version (refer to the Xtralis web site). The latest version of the Setup Utility is available on the website: www.xtralis.com/adpro

Important: Do not upgrade the Presidium software to Version 2 or greater with a Setup Utility V1.xx as this process may leave the unit in a state whereby the default setting may need to be reloaded.

Use the ADPRO Presidium Setup Utility to select and connect to the Presidium Mini site to be upgraded.

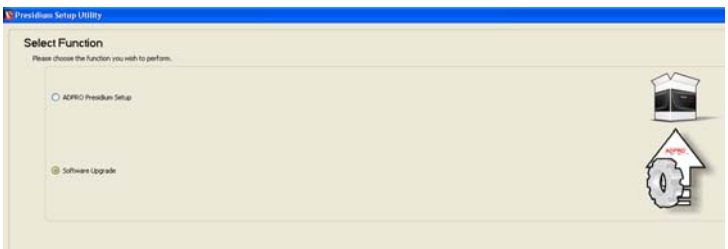
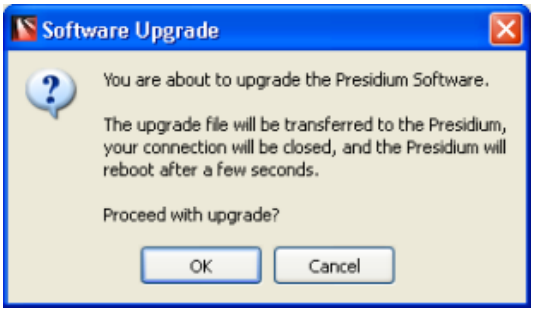


Figure 53: Software Upgrade option

- Check the **Software Upgrade** option
- Browse to the location of the upgrade file and **select the file** to be used (for example; *Presidium_upgrade_02.00.02_0001.adu*)
- Click the **Upgrade** button to start the process. The following warning message is displayed;


Software Upgrade
You are about to upgrade the Presidium Software.
The upgrade file will be transferred to the Presidium, your connection will be closed, and the Presidium will reboot after a few seconds.
Proceed with upgrade?
OK
Cancel

- Click **OK** to continue.

Important: **It is not recommended the Presidium Mini be upgraded over any type of WAN connection. This is because if the link is dropped during the upgrade process the unit may be left in an inoperatable state.**

Important: **Upgrades performed over a WAN communications network such as xDSL may take upto 30 minutes to complete. Also updates to video images within the Setup Utility can typically take 10-15 seconds.**

Important: **Do NOT switch off the power to the Presidium Mini during the upgrade process, as it may leave the unit in a non-operational state which will require the unit to be returned to the manufacturer for restoration.**

Important: **Once the upgrade has been completed, reconnect to the unit and follow the process described in** *Saving a Configuration to File* **on page 63 to save a copy of the settings. This procedure is required as previous "saved settings" files cannot and should not be loaded.**

4.6 Troubleshooting

4.6.1 Detection Problems

Troubleshooting may be performed using a video monitor connected to the Presidium Mini video output, if required.

If detection is not occurring as expected, check the following:

- Ensure that **Camera Calibration** has been properly performed (refer to *Camera Calibration* on page 51).
- Ensure that the **Detection Areas** have been defined as required (refer to *Areas* on page 52).
- Ensure **Trigger Areas** have ben positioned and programmed correctly.
- Adjust the **Detection Sensitivity** as required (refer to *Detection Sensitivity* on page 55). It may be necessary to increase the sensitivity. The sensitivity may be customised (refer to *Customise Sensitivity* on page 56).
- Adjust the **Environment Activity** as required (refer to *Environmental Activity* on page 55).
- Each Presidium Mini channel may be isolated, which will prevent any alarms from being generated by that channel. Ensure that the channel is not isolated.
- The Presidium Mini must be set to Secure for detection to occur. Check that the physical input to the Presidium Mini is in the Secure position (refer to *Access/Secure Input* on page 40).
- To perform detection diagnostics, select **Display all Tracks on Video Output** (*General Setup* on page 49), this displays all movement that the Presidium Mini is detecting in the detection area. This may be used to ensure that all movement is being detected.

Note: It is not recommended to enable this function during general use of the Presidium Mini. It should only be used as a diagnostics tool when setting up or fault finding the Presidium Mini.

Note: The Presidium Setup utility must not be connected to the Presidium Mini during normal operation. The setup utility should only be connected when programming or changing settings. All VMD detection is temporarily disabled when the Setup Utility is connected.

It is also important to check that detection is not occurring in areas in which detection should not occur. This will minimise the number of nuisance alarms. In each detection area, check that detection does not occur in areas that are masked out, or should not be aligned with PRO series PIRs or other detection technology.

4.6.2 IP Address Forgotten

If the Presidium Mini appears in the list of local units on the **Establish Connection** page (refer to *Connect to an Presidium Mini* on page 42), highlight the Presidium Mini and select the **System Info** button. The IP Address and Subnet Mask are displayed.

4.6.3 Presidium Mini Will Not Connect

Presidium Mini Appears in List of Local Units

If the Presidium Mini appears in the list of local devices on the Establish Connection page (refer to *Connect to an Presidium Mini* on page 42), but will not connect:

1. Ensure that the PC and the Presidium Mini have correct IP addresses assigned and that the subnets match.

If the PC has a static IP address on a different subnet to the Presidium Mini, they won't be able to connect (refer to *Configure the PC Network Connections* on page 41).

2. Select the **System Info** button to display the Presidium Mini's IP address and subnet.

Presidium Mini Does Not Appear in List of Local Units

If the Presidium Mini does not appear in the list of local units:

1. Ensure that the connected PC has a compatible IP Address. This may be performed by following the procedure on page 41, **Configure the PC Network Connections**.
2. Restart the Presidium Setup Utility.

The Presidium Mini should now appear in the list of local units.

Reboot the PC or reinstall the Presidium Setup Utility if the Presidium Mini does not appear.

4.6.4 Presidium Setup Utility cannot be Started

If the Setup Utility is closed incorrectly, it will be left in a state where an error dialog will appear when trying to restart. The error dialog box may indicate the Setup is already running.

To rectify this problem using Windows Explorer, navigate to the installation location. The default is:

C:\Program Files\ADPRO\

Locate the file called Setup Utility 1.0pSU.lock and click **DELETE**.

The Setup Utility should now start correctly.

5 Connection to a Third-Party DVR

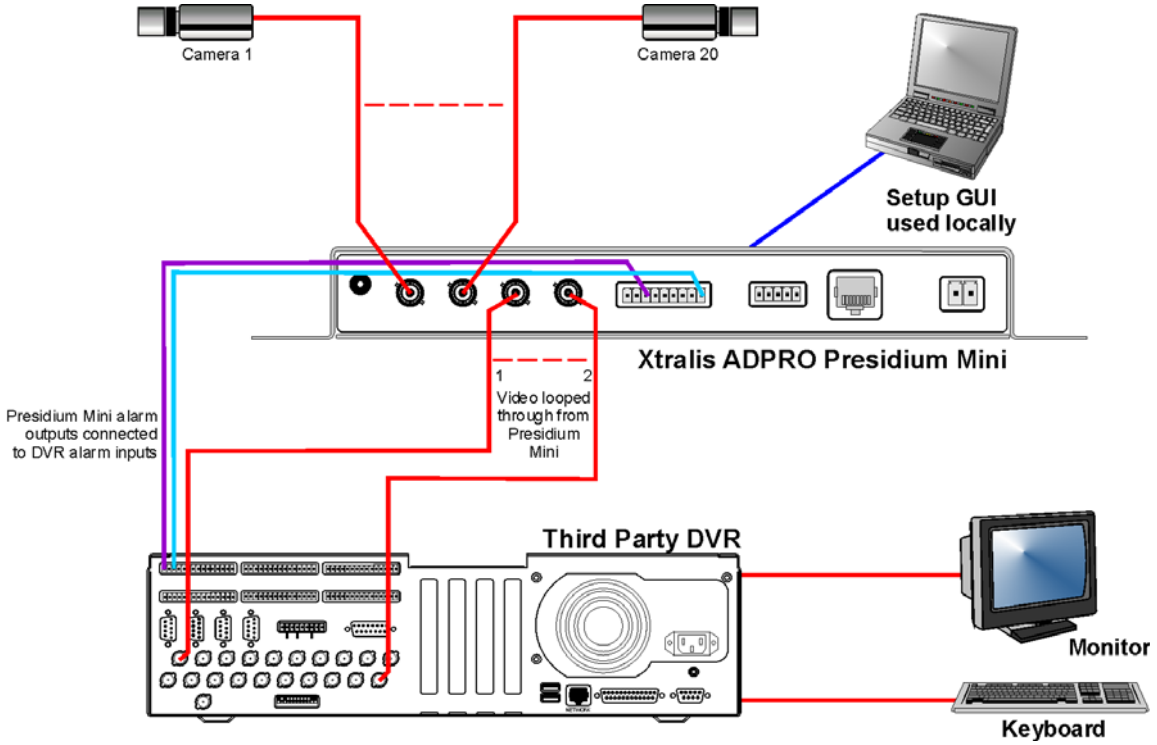


Figure 54: Typical Connections to a Third Party DVR

The above diagram shows a sample configuration for connecting a Presidium Mini to a third-party DVR. The following section describes settings and behaviour associated with the equipment.

When a no-video or contrast alarm occurs, the Presidium Mini still sends video with an error message displayed. This means that if the DVR has a no-video or contrast monitoring function, it will not detect these fault conditions. The alarm output of the channel in alarm is activated and will remain active until the problem is rectified.

Channels may be isolated by wiring relay outputs from the DVR, to the Alarm Isolate inputs on the Presidium Mini (refer to *Alarm Inputs* on page 37).

The Presidium Mini may be switched between access/secure, by wiring a relay output from the DVR to the Access/Secure pin of the I/O connector on the Presidium Mini (refer to *Access/ Secure Input* on page 40).

The Presidium Mini does not supply camera names or time/date information with the video. The DVR must be used to supply channel names and time/date.

Tracking information can be supplied by the Presidium Mini. There a two types of tracking provided:

- **Display Alarm Tracks on Video Output**: A track is displayed showing the path taken by a target as it moves through the detection area. The track is only displayed once an alarm has been generated.
- **Display All Tracks on Video Output**: This option should only be used for diagnostics.

Tracking may be disabled if required (refer to *General Setup* on page 56).

6 Specifications

Table 5: Presidium Mini Specifications

Video Inputs	2 independent camera input per VM15 module or Presidium Mini Each input 1 V peak to peak, 75 ohm or high impedance
Video Outputs	2 independent video outputs per VM15 module or Presidium Mini 1 V peak to peak video output when terminated by 75 ohm load Each video output displays channel video and on screen display information and connects directly to the camera during power failure
Inputs per Channel (2 channels per module) or Presidium Mini	All external inputs are transient protected and designed to be driven by dry contacts or logic levels. Voltage input <0.8 V - logic low, 7 ma (max); between 3.5 V and 5.0 V - logic high. Screw terminal connectors Normally Open (NO), Normally Closed (NC), Single End of Line (SEOL) or Dual End of Line (DEOL) tamper detection on each input using supplied resistors. Isolate input to disable/enable detection, no video and contrast alarms. Alarm input with programmable hold time,
Inputs per chassis	Access/ secure (MODE) input to enable/disable detection on all channels. Screw terminal connectors Normally Open (NO), Normally Closed (NC), Single End of Line (SEOL) or Dual End of Line (DEOL) tamper detection on each input using supplied resistors.
Outputs per channel (2 channels per module) or Presidium Mini	Alarm output relay activates on the occurrence of an intrusion alarm. Can also be programmed to activate on a no video and/or contrast alarm.
Outputs per chassis	1 general alarm relay (normally open and normally closed contacts) activates when an alarm condition occurs on any module (standard Presidium only) 1 fault relay (normally open and normally closed contacts) activates on the occurrence of any system fault: power loss, over temperature condition, system reset.
Network Connections	*Setup Port* (Front Panel on standard Presidium and Rear Panel on Presidium Mini) 10BaseT / 100BaseT Ethernet Port supporting TCP/IP. *LAN 1 & 2 (Rear Panel)* - standard Presidium only Both 10BaseT / 100BaseT / 1000Base T Ethernet Port supporting TCP/IP. Used for HLI connection to FastTrace / FastTx / FastTrace-R and remote network connection.
Setup	Setup via an intuitive, PC based utility that connects to the unit via a network connection.
Power Requirements	100-240 volts, AC, 47-63 Hz. Maximum power dissipation 250W Presidium Mini 11V to 16V DC. Maximum power dissipation 18 W. Universal AC Power Adaptor supplied.
Construction	Standard 19" rackmount, 3U high subrack to DIN4194 Presidium Mini - Metal desktop enclosure. Two mounting ears used for wall mounting
Dimensions	482 mm (19 inch) W x 132 mm (5.2 inch) H x 281 mm (11 inch) L Presidium Mini - 263 mm (10.3 inch) W x 73 mm (1.3 inch) H x 236 mm (9.3 inch) L
Weight	Rackmount - Fully configured system 8.7 kgs (19.2 pounds) Presidium Mini - 2.0 kgs (4.4 pounds)
Temperature Range	Operating range 0 - 40°C (32 - 104°F). Humidity less than 90% non-condensing

EMC Compliance	**Emissions: Class A compliance to EN55022:1998 +A1+A2, AS/NZS CISPR 22:2006, FCC Part 15** **Harmonic Current Emissions to EN61000-3-2:2000** **Voltage Fluctuations & Flicker to EN61000-3-3:1995 +A1** Immunity: EN50130-4:1995 +A1 +A2 (Alarm Systems Product Family Immunity Standard) UPS required for compliance with 100 mS mains voltage interruption requirement applies to Presidium only.
Safety Compliance	IEC 60950-1:2001 (CB Report including national deviations for AU, CA, KR, US and EU Group). UL Listed to US and Canadian Safety Standards under File E219750 (pending)
Warranty	Twenty four (24) months on all components
Configuration Options	The standard Presidium chassis has slots for up to ten video input modules. Each module has two channels of VMD.
Video Input Module option	VM15 video intrusion detection module, two VMD channels per module One VM15 module per chassis is required for basic operation.
General Alarm / Fault Relay	Switching Voltage = 30 VDC maximum Switching Current = 1 Amp maximum Isolation = 750 V maximum

Appendix A: False and Nuisance Alarms

Ultimately no security system is perfect, generally through generating false or nuisance alarms. As a security system is made more sensitive to detecting intrusions, the false and nuisance alarm rate can increase. False or nuisance activations limit the effectiveness of a security system, as operators become used to receiving alarms that are not valid, and may miss valid alarms assuming that the alarm is just another false or nuisance alarm.

- A False Alarm can be defined as an alarm activation that is reported, but the cause of which can not be identified.
- A Nuisance Alarm can be defined as an alarm activation that is reported, but the cause of the alarm can be verified and no further response is required.

The goal in designing a security system is to provide the highest rate of successful detection, traded off against the lowest rate of false and nuisance alarms. Using a system such as Presidium, coupled to ADPRO's FastTrace / FastTx / FastTrace-R, provides the capability to remove Nuisance Alarms as a problem, as the alarm must be verified remotely at a Monitoring Centre prior to dispatch of personnel.

The use of a second detection technology/device (e.g. PIR, microwave detector or fence sensor) may also be useful in minimising false alarms. The second device may be 'ANDed' with VMD to provide 'double knock' alarm generation.

In addition, a well-designed and correctly installed system can limit the generation of False Alarms significantly. The capability of reducing the impact of both of these types of problem alarms greatly enhances the utility and suitability of the Presidium Intelligent Video System to a number of scenarios.

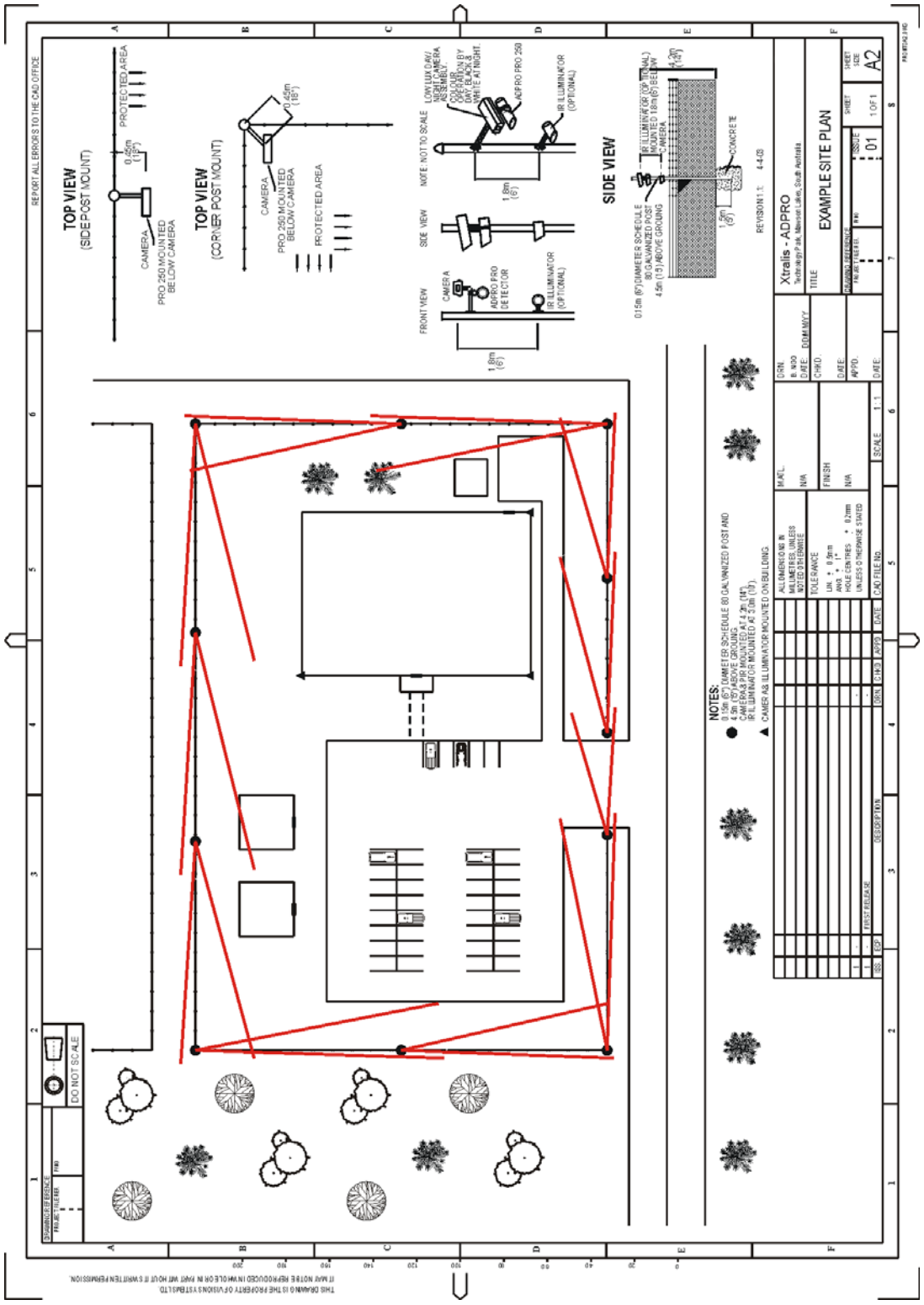
Appendix B: Site Survey Checklist

Company_____ Date _____

Location _____ Survey by _____

Site Plan Annotation	**Checked**
Location of lighting	
Location of equipment room	
Communications infrastructure identified	
Trees identified and marked	
Location of fences and barriers	
Location of nearby roads	
Location of adjacent structures	
Location of existing CCTV systems or other detectors	
Location of all structures	
Other Requirements	
Site images acquired	
Clarification of customer and security expectation	
Clarification of any special security requirements	

Appendix C: Example Site Plan



Appendix D: System Design and Equipment Checklist

Company_____ Date _____

Location _____ Design by _____

Channel No	Camera Selected	Lens Selected	Field of View OK	Lighting OK	Other Detectors	Camera Mounting	Cabling Distance

Any Special Requirements: _____

_____

_____

Appendix E: Camera / Lens Selection

Table 6: Horizontal FOV - 20 Metres (66 Feet)

Lens focal length (mm)	1/4" camera format				1/3" camera format				1/2" camera format			
	Max. Distance (metres/feet)		Dead zone (metres/feet)		Max. distance (metres/feet)		Dead zone (metres/feet)		Max. distance (metres/feet)		Dead zone (metres/feet)	
4.8	30	98	6	19	20	65	3	10	14	48	2	5
6.0	37	123	8	25	25	81	4	15	18	60	3	9
8.0	50	164	10	35	33	109	7	22	25	81	4	15
12.0	75	247	16	53	50	164	10	35	37	123	8	25
16.0	100	330	22	71	67	220	14	47	50	164	10	35
25.0	156	515	34	112	104	343	23	74	78	257	17	55

Table 7: Horizontal FOV - 22 Metres (75 Feet)

Lens focal length (mm)	1/4" camera format				1/3" camera format				1/2" camera format			
	Max. Distance (metres/feet)		Dead zone (metres/feet)		Max. distance (metres/feet)		Dead zone (metres/feet)		Max. distance (metres/feet)		Dead zone (metres/feet)	
4.8	33	108	6	20	22	71	3	11	16	53	2	6
6.0	41	135	8	26	27	90	5	15	20	67	3	10
8.0	55	181	11	35	36	120	7	22	27	90	5	15
12.0	82	272	16	54	55	181	11	35	41	135	8	26
16.0	110	363	22	73	73	242	15	48	55	181	11	35
25.0	172	567	35	115	115	378	23	76	86	283	17	57

Table 8: Horizontal FOV - 25 Metres (83 Feet)

Lens focal length (mm)	1/4" camera format				1/3" camera format				1/2" camera format			
	Max. Distance (metres/feet)		Dead zone (metres/feet)		Max. distance (metres/feet)		Dead zone (metres/feet)		Max. distance (metres/feet)		Dead zone (metres/feet)	
4.8	37	123	6	20	25	81	3	11	18	60	2	6
6.0	47	154	8	26	31	102	5	16	23	76	3	10
8.0	62	206	11	36	41	137	7	23	31	102	5	16
12.0	94	309	17	56	62	206	11	36	47	154	8	26
16.0	125	412	23	75	83	275	15	49	62	206	11	36
25.0	195	644	36	117	130	429	24	78	98	322	18	58

Table 9: Horizontal FOV - 30 Metres (98 Feet)

Lens focal length (mm)	1/4" camera format				1/3" camera format				1/2" camera format			
	Max. Distance (metres/feet)		Dead zone (metres/feet)		Max. distance (metres/feet)		Dead zone (metres/feet)		Max. distance (metres/feet)		Dead zone (metres/feet)	
4.8	45	148	6	21	30	98	4	12	22	73	2	7
6.0	56	185	8	27	37	123	5	17	28	92	3	11
8.0	75	247	11	38	50	164	7	24	37	123	5	17
12.0	112	371	17	57	75	247	11	38	56	185	8	27
16.0	150	495	23	77	100	330	15	51	75	247	11	38
25.0	234	773	37	121	156	515	24	80	117	386	18	60

Note: Caution should be used with the detection ranges shaded grey. At these ranges, camera visibility and system performance could be adversely affected by rain, mist, dust storms, snow or aggravated camera vibration. Camera mounting height = 4.2 metres (14 feet)

Appendix F: Commissioning Checklist

Company_____ Date _____

Location _____ Commissioned by _____

Channel No	Detection Test	Detection Test Documented	Soak Test	Parameters Recorded
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Appendix G: Site Detection Tests

Company_____ Date _____

Location _____ Tested by _____

1. Detection Test Description

Detection Area (Camera Name and No)	Test Number	Test Conditions (day/night/dusk/ dawn)	Test Description

2. Detection Test Performance

Detection Area (Camera Name and No)	Test Number	Test Due	Test Performed	Signed	Detection Pass/Fail

Appendix H: Site Maintenance Tables

Company_____ Date _____

Location_____ Maintenance by _____

Table 10: Camera Maintenance Table

Camera Name and Number					
Maintenance Due					
Maintenance Performed					
Signed					
Cleaned Window					
Housing Condition					
Cable Condition					
Heater or Blower functioning					
Correct Alignment					

Company_____ Date _____

Location_____ Maintenance by _____

Table 11: PIR Maintenance Table

PIR Location					
Maintenance Due					
Maintenance Performed					
Signed					
Cleaned Window					
Window Condition					
Cable Condition					
Correct Alignment					

Appendix I: Installation Quick Reference

This appendix provides a quick reference guide for installation of a Presidium Mini system.

Camera Alignment

Align the camera as described in the site design/plan documentation. Test the alignment by measuring the FOV at the near range and the maximum range.

PIR Alignment

Align the PIR as described in the site design/plan documentation. Test the alignment by a manual check or using test software to confirm detection.

Set Detection Areas

Set the detection areas on each camera on Presidium Mini to mask out any unwanted areas that are unavoidably within the FOV of the camera.

Program Detection Parameters

Program the detection parameters in each Presidium Mini channel. Use the suggested typical settings as described in this document and adjust later as required.

Test System

Perform walk/run tests in each detection area to check that the Presidium Mini/PIR is functioning as expected. Alter parameters as required to achieve detection/reject nuisance alarms and retest as appropriate. Save the final configuration for all channels.

Maintain System

Perform routine maintenance on the system to ensure that detection still occurs as initially planned, and the nuisance alarm rate is at a minimal level. Take remedial action if the system is not functioning as required.

Appendix J: Presidium Mini Do's and Don'ts

Do	Don't
Walk test at day/dusk/night	Install cameras looking into lights/IR illuminators
Trim foliage regularly	Change parameters without testing the system
Use PIR terminations barriers	Use a FOV of greater than 30m (98ft)
Check alignment of cameras	
Check alignment of PIRs	
Regularly clean camera windows/lens	
Regularly clean PIR windows	
Route cables neatly	
Spend time performing a thorough survey	
Use barriers to prevent light spillage from roads	
Account for dead zones in site layout and camera/lens selection	
Check target sizes at the foreground and background	